

About the Cover:

As always, I rendered this week's cover in Adobe Photoshop.

Cover Artist:

Marc Tobin

It's really hot here in Pennsylvania, so I'll keep this short. Feel free to visit my Web site at www.mtillustration.com or e-mail me at marc@mtillustration.com.

ComputerEdge® is published weekly, except over the Christmas holiday, by The Byte Buyer, Inc. All material published in *ComputerEdge* or appearing on *ComputerEdge Online* is copyright © 2003 by The Byte Buyer, Inc. All rights reserved. Annual Home Delivery Service rates (51 issues) are \$35 Bulk Rate, \$85 First Class. Please note: U.S. Post Office does not guarantee speed of bulk rate delivery.

Administrative offices at 4740 Murphy Canyon Road, Suite 250, San Diego, CA 92123. Send all inquiries, subscription requests, editorial submissions to P.O. Box 83086, San Diego, CA 92138. Not responsible for unsolicited material.

Printed in San Marcos, CA.

POSTMASTER: Send address changes to *ComputerEdge*, P.O. Box 83086, San Diego, CA 92138.

COMPUTOREEDGE®

SAN DIEGO'S COMPUTER & INTERNET MAGAZINE • WWW.COMPUTOREEDGE.COM

July 22, 2005
Volume 23, No. 29

Computer Focus

- 8 Digital Dave** *by Digital Dave*
- 14 Digital Voices: Augmentative and Alternative Communication** *by Janet Hopkins*
Computers are speaking for people who cannot communicate verbally.
- 18 From NASA to Your Medicine Chest** *by June Campbell*
NASA-developed technologies with practical uses for earthlings.
- 22 Communication at the Speed of Life** *by Stace Johnson*
Cutting-edge, lifesaving new hospital technology.
- 26 Mac Madness** *by Lucas Roebuck*
The Mac Still Doesn't Listen Well
- 28 Back to Basics** *by Kirk Kirksey*
How to Keep Your Mean Machine Clean
- 32 Worldwide News & Product Reviews** *by Charles Carr*

Internet Focus

- 36 Hot On the Web** *by Jim Trageser*
Michael Robertson Stakes Out Yet More New Turf
- 37 Web Directory**

Departments

- 4** Edgeward
- 6** Editor's Letters
- 35** Calendar of Events
- 38** Classifieds
- 39** Career Opportunities
- 40** Advertiser Index
- 40** Product Index
- 41** Directory of Services

edge **W O R D**

You know you're getting old when your calendar starts to look like a Who's Who of the AMA. It used to be that you just got sick and lived with it, or died. Now, with all the medical advancements we've made, we can cure all kinds of maladies and live long, full lives. If, that is, you find injections, probes, scans, terminal waiting, cold stethoscopes, surgeries, and popping pills fulfilling.

My personal calendar has three doctor's appointments slated for August. Mind you, I'm not sick. These are check-ups, follow-ups, maintenance visits, and so on. Yes, by my age you need regular maintenance.

My biggest fear when I go to the doctor is that I will forget the one piece of important information that will make the difference between an accurate diagnosis and the eternal, "Why don't we try this?"

When the receptionist hands me that form to fill out—the one asking for my medical history—my eyes roll back in my head. How can I possibly condense 40-plus years of medical history into a single page? I can't, obviously, so I have to guess at which parts of that history are likely to be pertinent to my current affliction. Somehow, I doubt that knowing I had a tonsillectomy as a child can hold much value for my podiatrist, but there the question sits, taunting me from the form.

And why do I have to fill this out on paper? Why not just type it directly into the doctor's database, so that I know my name is spelled correctly and I won't be confused with some other patient.

As usual, by the time I isolate a problem, someone else has come up with a product to solve it. In fact, many people have come up with ways to solve this particular problem. Some are more elaborate than others and involve worldwide collaboration and expensive hardware. But they all involve computers, and any of them can make my life a lot easier.

Since I don't have a lot of money, I'm partial to a software program called HealthFile Plus from WakefieldSoft (www.wakefieldsoft.com). It's only \$29.99, and you can download a free trial version to check it out before you drop any cash.

It's a simple program that keeps track of your medical information in a database, and serves it up for you or your doctor on request. It does require that you input all your information, which will take some doing, but once it's in there, you never have to fill out that stupid form again!

It keeps track of your appointments, medications, tests, allergies, surgeries, family medical history, insurance—even legal information like DNR requests or living wills.

If you have a handheld computer, just take it with you to your appointment. You have all the answers to your doctor's inquiries at your fingertips. If you don't have a handheld, you can print out the information from any or all of the categories on your PC and take it with you.

No more guessing; no more writer's cramp. Just a more accurate record to help your doctor treat you in the context of your total health picture. I don't know about you, but I'm feeling better already.

Leah Steward, Editorial Director
edletters@computoredge.com

COMPUTOREDGE® SAN DIEGO'S COMPUTER MAGAZINE

Publisher Jack Dunning

Financial Operations Marilyn Mohr

Operations Director Norrel T. Pugay

Editorial Director Leah Steward

Editor Patricia Smith

Technical/Online Editor Gretchen Grunburg

Reviews Editor Charles Carr

Contributing Editors James Alguire
Frank Araullo
Roy Davis
Kirk Kirksey
Lucas Roebuck
Jim Trageser
Douglas E. Welch

Senior Account Executive Elvira Harres

Account Executive Grace Tec

Art Director Eeka Cano

Administration/Production Trina Morris

Webmaster Matt Salvotti

Advertising

All advertising in *ComputerEdge*® is subject to current rate card. *ComputerEdge* reserves the right to not accept an advertiser's order. Only publication of an advertisement shall constitute final acceptance of the order.

San Diego Deadlines

Display advertisements must be received by 5 p.m. the Monday prior to publication. Submissions for Classifieds, Directory of Services, Help Wanted, User Groups, and Web Listings must be received by 4:30 p.m. the Friday prior to publication. *ComputerEdge* reserves the right to reject, edit, or cancel the publication of any listing submitted.

Mailing Addresses

ComputerEdge San Diego
P.O. Box 83086, San Diego, CA 92138
(858) 573-0315

ComputerEdge Colorado
P.O. Box 5073, Englewood, CO 80155-5073
(720) 870-3601

ComputerEdge® Online
www.computoredge.com

A Bonding of Cultures

■ In reference to Ben Tupper's letter [Editor's Letters, June 24, "La Lengua del Internet Está Cambiando?"] about the changes in the Spanish language between people living in Mexico and those living in the United States, consider this.

The Spanish language spoken in Spain is different depending on the region, as is the dialect of Spanish spoken in Mexico. The same holds true for Cuba, Puerto Rico, the Philippines, and even within the various regions of the United States, just to mention a few. New York Spanish differs from the dialect spoken in Puerto Rico, although many Spanish speakers in New York either came from Puerto Rico or are children of people who did. Spanish spoken in Florida differs from that spoken in Cuba, even though they have a common origin.

English also has dialects that reflect the area where it is spoken. New Yorkers sound odd to Californians;

Canadians sound odd to an Englishman; Australians sound "a little off" to all of us, and even have their own regional dialect differences. Southerners are a constant source of amusement to Northerners because of their "accent."

The French have the same problem. A Frenchman would be aghast at the

editor's LETTERS

edletters@computoredge.com

"mangling" of Napoleon's language by a Quebecker.

Just as Mexico is not Spain, and therefore has its own unique culture and dialects made up of Spanish and Native American origins, this is not Mexico, and people living here are going to develop their own dialect. California is unique in that we have several different European origins, multiple African backgrounds, Spanish, Japanese, Chinese, Filipino, multiple Middle Eastern origins, numerous Native American nations

and bands, and uncountable small enclaves of varying cultural heritage, in addition to English and Spanish speakers.

All of these together make up our uniquely California culture and have a linguistic effect upon each other. Words and syntax migrate from one language to another and cause the "problem" that Ben is reporting. This should not be viewed as a "problem," but rather as growth, a coming together and bonding of the varied cultures into something greater and more powerful than the individual cultures alone.

Dave Encinas

What's Missing?

■ [I'm writing in response to a letter in the June 24 issue called "A Crossword Puzzle."] I concur that *ComputerEdge* is a great magazine! I have been reading it for two months now.

[The reader] wrote about your magazine: "The only thing I think is missing is a crossword puzzle."

I think that there must be two things missing. It is

missing a crossword puzzle and a centerfold. If you had a centerfold (preferably female), then I feel all would be forgiven for the lack of a crossword puzzle. I hope other readers would agree.

Chuck R.

More About the Macintosh

■ I am a Macintosh user. I anxiously await each copy of *ComputerEdge*. I quickly turn to Mac Madness. Then, later, I sift through the rest of the booklet, looking for anything else that pertains to the Macintosh. Sometimes there is something. Sometimes there is not.

So, my plea is this: Won't you please remember that there are lots of us who would like to have more articles on the Mac?

Midge Peltier □

Send e-mail to edletters@computoredge.com. Letters received may be edited for length and clarity. We regret that we cannot respond individually to submissions.

GET SERIOUS ABOUT SECURITY!

Sales • Service • Support • Consulting

Network Solutions

- LAN/WAN/VPN/Internet Hosting
- Windows/Novell/Linux Implementation
- Voice/Data Cabling ▪ Network Management
- Service Contracts ▪ Servers/Workstations

Network Security

- Digital Video Surveillance ▪ Perimeter Security
- Wireless Security ▪ VPN Solutions ▪ Intrusion Detection and Prevention
- Best Pricing on Sonicwall Products – Will Beat Any Price!

Multi-Layered Solutions

858-558-8621



www.XetraNetworks.com

Not quite ready to jump into your own cabinet yet?

Routers, Firewalls, Switches, DNS, Databases, Email - Oh my...

Colocation Synergy

Single Server Colocation

From: \$99.00

Find out today how you can stay protected, share our resources and reduce expenses.

Servicing web host startups, application providers, high-availability websites and company intranets.

Powered by: Castle Access



EPHOST, INC.

858-270-6122

www.ephost.com



DIGITAL DAVE

Dear Digital Dave,

How do you get the IE window to open in full-screen mode? I have a new Samsung SyncMaster 910MP, and the IE window always opens at—or closes to—80 percent of the screen. I have to expand it manually each time I open IE.

I [also] have a question about the icons in my Favorites list. IE has a sneaky habit of changing the original icons to the little “e” icons. Rather annoying. Is there a cure for this, too?

Richard Johnson

Dear Richard,

Normally, the Internet Explorer window will open at the same size it was

closed. That’s the default.

You can control how a window for an application opens by adjusting the shortcut for it. Right-click on the icon on your desktop or toolbar and select Properties. On the shortcut tab, you can select that the window open as Normal Window (open same as closed), Minimized, or Maximized.

If something is messing with your IE and making the window smaller, then selecting the Maximized setting should override it.

IE doesn’t do a good job of maintaining the icons that get downloaded when you add a new Favorite. The “favicon” file gets cleaned out, and there go your icons! It’s back to the default little “e.”

You can use a utility called Fresh Links to keep IE from losing those icons. Fresh Links can also help you clean out old or outdated Favorites links. Reducing the clutter can make it easier for you to find that site you visited last month and just have to get back to!

Go to <http://resqpc.com/freshlinks> to check it out.

Digital Dave

Dear Digital Dave,

My wife writes long e-mails, and before she can send them, they go to Nevada and can’t be found.

This has happened while using Windows XP, with several different ISPs, and with various e-mail clients, including Outlook Express.

I told her to type her letters in Word, and then copy and paste them into the message.

James White

Dear James,

Very good advice! That’s exactly what I would recommend.

Especially if you are using a Web-based e-mail application, you can lose your work if there is a hiccup on the Internet. Even if you have a local e-mail application, using Word has some advantages for authoring long letters.

For one, the spelling and grammar-checking tools in Word certainly make my missives look more professional. It must be this keyboard or something, because “the” always comes out inside out, and Word automatically fixes it.

I often don’t hold the Shift key down long enough to catch the capital letter at the beginning of a sentence. Again, Word magically changes it to upper case.

Word has an automatic backup copy option, so even if your computer burps, most of your wife’s work should be saved. Handy for

any long text work.

Finally, Word gives you a nice, big window to work in instead of the tiny box that many e-mail applications give you. That makes it easier to see a big chunk of text for proofreading or just editing the organization of your letter.

Then it’s a quick operation to cut and paste it from Word to your e-mail application. Use the <Ctrl-A> keystroke pair to select the whole letter, then <Ctrl-C> to copy it. Put your cursor in the e-mail box, and hit <Ctrl-V> to paste it.

Digital Dave

Dear Digital Dave,

This winter, we were sent what we were told was a DVD with family pictures on it, but our DVD player could not play it. This spring an article in a computer magazine talked about storing pictures on a disc like a DVD, but it was called a VCD, and the article said that later models of DVD players could play them.

I bought a new DVD player, and it still wouldn’t play the disc with my family pictures, and I didn’t see VCD capability listed on any boxes of new ones in the store.

Do you have any ideas?

Chuck

(continued on page 12)

Digital Dave’s Tip

My family and I just moved to a new house in another state. (We seem to do that too often.) The installers of our cable TV just left.

Besides the digital video recorder for the HDTV, we have a black box that provides Internet connection and telephone service. The black box even has its own built-in battery backup system.

The installer was trying to hook up the telephone line

to the wiring in the house. Even though the house is only five years old, the wiring is all messed up, the product of some amateur installation.

The solution? The same as we have been using for the last year or so: plug the base station of our cordless phone into the Internet/phone modem. No wiring involved!

We have a cordless phone system that has four remotes, with charging stations scattered around the house. The whole thing cost less than \$100, and eliminates a bunch of wiring headaches. □

DAVE

(continued from page 8)

Dear Chuck,

VCD, or Video CD, is a very old format that never was very popular, but shows up in many products. Often a DVD player can play the VCD format, but it doesn't advertise it.

Here is a list of DVD players with information about which formats they play. Beware that it is users' reviews, so double-check the claims with an Internet search for the particular DVD player you are considering. Usually the manufacturer's Web site will have detailed specifications: www.videohelp.com/dvd_players.php.

But why bother with a DVD player when most computer CD and DVD drives can read the VCD format? Pop that family

album in the PC, and gather around the monitor.

Digital Dave

*Dear Digital Dave,
I am using the XP version of Windows, and cannot save a Lotus 123 file on the CD writer without it being a read-only version. How can I save the file as an "archive" version?*

Mahalo and aloha in advance.

George Davis

Dear George,
Windows automatically saves files written to a CD as read-only to protect you from accidentally reading the file from the CD, editing it, and then trying to save it back to the CD, which obviously doesn't work. It's to protect you from getting frustrated.

Files written to a CD

should be copied back to your hard drive—and the read-only attribute cancelled—before any work is done on the file.

Microsoft has spoken. *He mea'ole.*

Digital Dave

*Dear Digital Dave,
In an issue of ComputerEdge back in January, it was described how a bit is stored on a hard drive, and how the magnetic bit is either north or south, making it on or off, 1 or 0.*

This question may seem farfetched, but when the magnetic poles switch again, I take it this will corrupt the world's data? What would happen to our hard drives if the poles switch slowly? Is this just a goofball question?

Karl Weiszhaar

Dear Karl,

Just like flipping the polarity of one magnetic domain on your hard drive does not change the domain next to it, the flipping of the Earth's magnetic poles will not change the data stored on your hard drive. There may be other effects of the switch of north and south poles, such as massive weather disturbances, that will make your computer data irrelevant, but the data will still be there.

Your letter prompted a thought. What if the Earth itself is a magnetic domain in some gigantic digital memory system that operates on a much larger and slower scale than our hard drives? Now that's really far out!

Digital Dave

E-mail Dave at digitaldave@computoredge.com.

DIGITAL DAVE de·fines:

What the Doctor Ordered

AAC: Augmentative and Alternative Communication. We all suffer situations where standard speech fails as a communication method. It might be in a noisy room where we have to use gestures and facial expressions to get the idea across when words can't be heard. People who have difficulty with speech have to rely on AAC even more, using computers as an alternative communication method. It might be e-mail, instant messaging, or even a text message to a cell phone. A keypad attached to a wheelchair arm can be the input device for similar messaging methods.

CAMA—Communication Aid Manufacturers Association. For information about specific AAC products and organizations, go to the CAMA Web site (www.aacproducts.org/index.lasso).

SYNTHESIZED SPEECH: Computer-generated speech has become part of our everyday life. You almost can't call a large company without hearing a synthesized voice. In fact, the whole call may be just touch tones from you and synthesized speech from the company. There are medical advice lines where you can dial in, select from menus, and get instant information about a minor medical

emergency. Speech synthesis is also useful as an AAC method, where the same keypad that can send text messages can also feed the speech synthesizer to communicate with people face to face.

SYMBOL PAD: Often, the person who needs to use AAC is very young or impaired, so a standard keyboard is too difficult. A symbol pad has pictures of words and phrases that can be selected to produce sentences. For instance, one symbol might stand for "I want." Another may be a picture of a glass of water. Other symbols may be actual photographs of caregivers or family members. Dynavox's Boardmaker software makes it easy to take clip art symbols and digital photos and quickly generate symbol pad covers with custom messages.

AT&T NATURAL VOICES: This is a speech synthesizer engine that can be incorporated into various applications for AAC. To see how good text-to-speech synthesizers have become, go to www.naturalvoices.att.com and try the demo. I tried something simple first, like the first part of the Gettysburg Address, and then had fun trying to stump it with odd names.

VOICE RECOGNITION: People with hearing impairments may get along with others close to them with AAC methods, but for

strangers, they may have to resort to voice recognition. A microphone picks up the speaker's voice, and a computer analyzes the speech and converts it to text that is displayed on a small LCD panel. The speaker may have to speak slowly and distinctly for the computer to make sense of it, but computers have gotten pretty good at figuring out what people have said.

CPOD: NASA's black box for people. The CPOD (pronounced see-pod) tracks biological functioning when strapped around your tummy. Instead of a bunch of separate sensors taped all over your body, the CPOD is a simple, flat plastic gadget that goes on quickly. Old sensors needed a tangle of wires hooked up to a rack of equipment. The CPOD can either record data for up to eight hours for later analysis, or, for real-time monitoring, it can transmit the data wirelessly. For anyone who has endured an EKG stress test on a treadmill while tethered to a machine, the CPOD would be a welcome improvement. People with heart conditions could exercise outdoors and be warned if they were pushing it too hard—or know that they weren't pushing hard enough. Go to http://science.nasa.gov/headlines/y2004/07apr_blackbox.htm for pictures and the whole story.



Digital Voices: Augmentative and Alternative Communication

By Janet Hopkins

Computers are speaking for people who cannot communicate verbally. Children and adults with cerebral palsy, amyotrophic lateral sclerosis (ALS), or other disabling conditions, or who have experienced a stroke or head injury, are talking through computers. Whether it's desktop, laptop, tablet, or handheld voice support that's needed, there are plenty of hardware and software options available to help consumers with communication disabilities.

People with speech disabilities have an impressive range of augmentative and alternative communication (AAC) options. AAC is broadly defined as ways other than speech that are used to relay a message from one person to another. Many special education teachers use picture/symbol software, such as Boardmaker (<http://mayer-johnson.com/software/index.html>), to create communication cards and overlays for special-needs students. These visual prompts, used alone or with recorded or synthesized speech, help students to generate auditory or written messages. Talking AAC devices are also known as

Speech Generating Devices (SGDs) and Voice Output Communication Aids (VOCAs).

The Interface

Static-display, dedicated AAC devices are used with changeable visual overlays that correspond to message grids programmed for the user. These devices may have voice-recording features. While the recorded human voice is attractive for users, the task of manually changing communication overlays can make static-display devices less efficient than dynamic-display AAC technology. The user cannot easily move from topic to topic when only one layer of communication is available at a time.

The more expensive the static-display device, the more configuration options and recording time are available. Compared with dynamic-display systems, static-display device communication options are rather limited.

A dynamic-display, or transient-display, AAC device has a screen that changes in response to user input. For example, a touch screen-enabled AAC device with dynamic-display

software allows a user to select a specific topic category, such as "food," which opens a new screen with specially programmed messages about food that are useful for the individual AAC user.

Dynamic displays facilitate speedy navigation through layers of symbols or text-cued voice output. Dynamic displays allow AAC users to efficiently access a wide selection of communication options stored on or generated through the device. The dynamic display may be designed as a series of grids, with combinations of graphics and text. For example, a picture of a clock could be programmed to say, "What time is it now?"

A dynamic-display communication device may also be designed to be similar to a word processor, but include synthesized speech output. These systems allow frequently used phrases or entire conversations to be stored. Phrases can quickly be accessed with the stroke of a hot key. AAC software systems, such as Aurora Talk (<http://aurora-systems.com>), allow a person with a commu-

(continued on page 16)

Voices

(continued from page 14)

nication disability to give a lecture or speech.

AAC software can be installed on a computer to expand its functionality. For example, the Gus! Multimedia Speech System from Gus Communications Inc. (www.gusinc.com) can be installed on computers running Microsoft Windows for a relatively affordable (\$695) dynamic-display speech system. Or, people can purchase dedicated AAC devices from manufacturers or vendors that specialize in developing or distributing high-tech communication aids.

Sophisticated AAC systems may cost as much as \$6,000. The Communication Aid Manufacturers Association (CAMA, www.aacproducts.org) represents some of the leading companies in this industry. Links to company Web sites can be accessed through the CAMA site.

The Device

Portable devices, like handheld computers, are a growing trend in communication technology. Gus, for instance, sells a handheld pocket communicator that includes a cell phone (www.gusinc.com/computer.html).

Many people with communication

disabilities also have to contend with physical and cognitive disabilities. Individuals need proper assessment by a speech language pathologist (SLP) and other professionals to determine the most suitable AAC system. SLP documentation is one requirement for Medicare coverage of approved technology.

Augmentative communication dedicated devices are eligible for Medicare funding. However, as stated previously, there are specific user and device guidelines that must be met to qualify for coverage. Learn more online through the Rehabilitation Engineering Research Center on Communication Enhancement (AAC RERC). The organization's Web site provides information on Medicare funding of AAC technology (www.aac-rerc.com/archive_aac-rerc/pages/MCsite/medicare.asp). Review the Medicare AAC Device Coverage Guidelines at www.aac-rerc.com/archive_aac-rerc/pages/MCsite/RMRP.html.

Saltillo Corporation makes a Medicare-eligible version of its popular ChatPC-II, called the Portable Chat-II (<http://saltillo.buyol.com/Item/2865R.htm>). The Portable Chat-II satisfies Medicare funding requirements for a dedicated communication device, as it doesn't allow the user to access any other non-communication functions that are accessible on the ChatPC-II.

Medicare will not cover the cost of a laptop, desktop computer, or PDA, as they are not dedicated speech-generating devices that meet the definition of durable medical equipment. However, the cost of voice-output software that will enable a computer to function as a speech-generating device can be reimbursed through Medicare.

Synthetic Voice Options

There are plenty of options when it comes to the type of voice you want your communication device to speak with. Voice-customization options will depend on the type of speech-generating device being used. DECTalk demo voices are available online at www.fonix.com/page.cfm?name=espeech_dectalk_demos.

Cepstral develops a range of voice options that are used by a company called DynaVox Technologies (www.dynavoxsystems.com), which makes AAC devices. Cepstral voice options include assorted male and female U.S. English, U.K. English, Spanish, French Canadian, and German voices, as well as novelty voices. Visit the Cepstral demo page to listen to the quality of these voices (<http://cepstral.com/demos>).

AT&T Natural Voices are popular realistic voice options. The AT&T Natural Voices demo page (www

San Diego's Largest Selection of Refurbished Desktop Computers, Laptops, Monitors, Printers and File Servers at Unbeatable Prices.

Inventory Reduction Sale!

Desktop Computers from \$79.00
Complete Laptops from \$299.00
17" LCD Displays In Stock

MEGA COMM TECHNOLOGIES
4380 Viewridge Ave, Suite D, SD, CA 92123
Phone 858-268-3380 • Fax 858-268-8983

Our inventory is always updated, so check back often at www.sdiego.com

Viewridge Ave. Balboa Ave. Hwy. 15

Store Hours
Mon-Fri 8am-5:30pm

 **San Diego Computer Society**

Special Interest Groups
currently affiliated with SDCS include:

- San Diego Macintosh User Group**
www.sdmug.org
- San Diego PC User Group**
www.sdpcug.org
- Kernel-Panic Linux User Group**
www.kernel-panic.org
- San Diego OS/2 User Group**
<http://home.san.rn.com/cq/sdos2ug/>

For more information on these groups, including their calendars and activities, please visit their websites or SDCS' website:
www.sdcs.org

.naturalvoices.att.com/demos) allows visitors to try the product by typing a message, then selecting language and voice options.

Famous AAC User

On March 15, 2004, NeoSpeech, a provider of speech technologies for handheld, desktop, and network applications, announced that astrophysicist Stephen Hawking had selected NeoSpeech's Text-to-Speech engine, VoiceText (www.freedomofspeech.com), as his new voice. VoiceText is integrated into Dr. Hawking's communicator, E Z Keys from Words+ (www.words-plus.com), enabling him

to clearly communicate with the outside world.

Dr. Hawking, a renowned scientist, professor, and author, suffers from ALS, a degenerative motor-neuron illness. While the disease has not affected Dr. Hawking's intellectual capacity, it has robbed him of many physical abilities. He can move only two fingers on his right hand, and he is unable to speak, making his computer with voice synthesizer essential for communication.

Dr. Hawking has a computer screen mounted on the arm of his wheelchair, which runs communicator software. The software enables him to

press a switch in his hand to create words and sentences easily and intuitively. Once he has built up a sentence, he sends it to NeoSpeech's VoiceText speech synthesizer, which turns it into speech. The technology enables Dr. Hawking to communicate, including writing scientific books and papers, and giving lectures.

* * *

More information is available online at the AAC Institute home page (www.aacinstitute.org). □

Janet Hopkins can be contacted via her Web site: <http://ca.geocities.com/janethopkinsbc>.

CALL TODAY 800.471.4SKYx 101

skyriver.

SAN DIEGO'S PREMIER HIGH SPEED INTERNET PROVIDER

HIGH SPEED INTERNET

IN 3 DAYS

@ HALF THE PRICE

INCREDIBLE SAVINGS ON BUNDLED VOICE (VOIP) AND DATA T1 SOLUTION

512 kbps

\$179 monthly

Web Hosting

- ✓ 10 e-mail accounts
- ✓ 100 MB web space
- ✓ 10 GB file transfer
- ✓ Free Setup

\$9.95 monthly

1.0 Mbps

\$249 monthly

1.5 Mbps

\$299 monthly

High Speed Dial-Up

- ✓ Unlimited Access
- ✓ 10 e-mail accounts
- ✓ 10 MB web space
- ✓ Anti Spam/Anti Virus

\$12.95 monthly

From NASA to Your Medicine Chest

By June Campbell

NASA (National Aeronautics and Space Administration) is a household word when it comes to developing technologies related to exploring the last frontier. However, many NASA-developed technologies have practical uses for earthlings, including technologies that contribute to our health and safety. The following NASA-supported projects are under development.

The Black Box for People

Just as an airplane's black box tracks data that is helpful when investigating an accident or other in-flight problem, NASA's black box for people, called the CPOD, tracks biological functioning when strapped to a human. Digital data can be stored for eight hours, or transmitted wirelessly to another device. Roughly the size of a computer mouse, the device tracks data, such as changes in heart rate, blood pressure, the amount of oxygen in the bloodstream, respiration, temperature, and how the person is moving. It could also be programmed to analyze atmospheric factors, including ambient temperature or concentrations of atmospheric gas.

When attached to a person's waist, the CPOD performs non-invasive

monitoring without strapping them to a system of wires and mechanical devices. A built-in signal notifies the wearer of developing problems.

While this device will be invaluable for learning how our body reacts to the extreme conditions that astronauts encounter, it has significant implications for life here on our planet. When used at an accident scene, for example, the CPOD could provide paramedics with instant information about a victim's vital signs. Physicians could use the CPOD to track a patient's reaction to a drug or medical procedure, and firefighters could use it to monitor their blood-oxygen level when inside a burning building.

The CPOD is still undergoing testing, but look for its appearance in a few years' time.

Cell Phone Ultrasound

Scientists in the ADUM (Advanced Ultrasound in Microgravity) Project are investigating the use of ultrasound to help with medical diagnoses for individuals on board spaceships. Astronauts at the International Space Station (ISS) are using ultrasound probes to look inside themselves and transmit the data back home via satellite transmission. Although earth-

bound ultrasound technologists undergo intensive training, the NASA astronauts use the probes with only five hours training. However, medical personnel assist them throughout.

Typically, ultrasound is used to obtain immediate pictures of internal organs and fetuses, but ADUM scientists are investigating ways to look at eyes, teeth, lungs, and muscles. They anticipate using ultrasound to acquire information about approximately 500 medical conditions.

This technique (i.e., using remote experts to provide guidance to non-doctors who are using ultrasound to obtain diagnostic-quality images) has implications for health care. Already, the Detroit Red Wings hockey team has used it successfully, transmitting medical data from the locker room to assist in diagnosing game-related injuries.

The ADUM team is investigating ways to transmit ultrasound data by cell phone. They envision ambulance personnel sending ultrasound information ahead to the ER so a treatment plan would be in place upon arrival. Similarly, they picture the technology being used on battlefields and by individuals living in remote areas far away from a physician.

Tumbleweeds in the Bloodstream

Truly the stuff of science fiction, project scientists are investigating nanotechnology as a tool to detect, prevent, and repair the effects of radi-

(continued on page 20)

Virus Got You Down - We Make House Calls!

Providing Superior Service Since 1996

We Offer Installation & Repairs, Virus & Worm Removal, Data Recovery & Backup



CA Lic # 831703



Now Hiring
Qualified Techies

Santee

8733 Magnolia Ave.
619.596.2141

Clairemont

7878 Clairemont Mesa Blvd.
858.278.7760

Carlsbad

6020 Paseo Del Norte
760.431.9114

We Provide the Best New, Refurbished, & Used
PCs & Laptops, Parts & Accessories.

****We Service All PC's & Laptops****

Authorized
Data Recovery Center
Free Evaluation
OF SAN DIEGO COMPUTERS
Operated by Former UCSD Computer Professor
20 YEARS EXPERIENCE
Hard Drives
Floppies
All Media
858.523.1633 619.977.7340
www.SandiegoComputers.com

(continued from page 18)

ation exposure—a serious hazard to astronauts spending time on Mars. NASA-supported scientists are placing “nanoparticles” inside blood cells, where they provide early detection of radiation damage.

The procedure involves injecting microscopic, tumbleweed-shaped nanoparticles into the astronaut’s bloodstream. Nanoparticles are larger than most molecules, but smaller than viruses. The inert nanoparticles attach to lymphocytes, white blood cells that are particularly sensitive to radiation damage. Lymphocytes create “suicide enzymes” before self-destructing. A fluorescent dye molecule attached to the nanoparticles reacts to these enzymes by emitting an early warning “glow” that indicates the beginning of radiation damage. A small device placed in the astronaut’s ear uses a laser to count the glowing cells as they flow through the eardrum’s capillaries, and then transmits the data wirelessly to the main computer.

Although it could be a decade before this technology is ready to go, there are many implications for medical usage. With modification, nanotechnology could be used as an early warning system against many medical conditions, and could aid in the early diagnosis of viral disease or a tumor. Since it can identify changes while cells are still in the body, the use of invasive biopsies could be reduced.

The ENose

The Electronic Nose, or ENose, is a versatile, incredibly sensitive device that scientists can train to recognize almost any compound. (Supposedly, it can tell the difference between Pepsi and Coke!) Although earlier versions of electronic noses are already in use by the food industry and others, NASA’s ENose is much more sensitive than these counterparts.

The ENose detects concentrations of poisonous substances much faster than the human nose would notice the smell. Ammonia, for example, is dangerous at a concentration of a few parts per million (ppm). Our noses can’t detect it until it reaches about 50 ppm, but ENose can detect an electronic change of 1 ppm

The ENose works via 16 different electricity-conducting polymer films. When a substance like ammonia is absorbed into the films, they expand slightly, thereby changing the amount of electricity that they can conduct. Each film reacts to each substance in a different way. These changes produce a distinctive pattern, providing enough information to identify the substance.

With some modifications, the ENose can be expected to serve us well on terra firma—whether as an early fire-detection device, as a means of checking for gas buildups in offshore oilrigs, or as a means for sanitation workers to know whether poisonous sewer gasses have collected.

Interestingly, the ENose is less sensitive than a dog’s nose. However, it can go places you wouldn’t want to

send your dog; it can be trained to detect odors that a dog can’t detect—and you don’t have to feed it.

Designer Blood Cells

Red blood cells are underutilized, say the scientists. Although excellent at carrying oxygen through the bloodstream, they could be doing so much more! Project scientists envision designer blood cells that carry medication or other substances, which could be used for transfusions without risk of transmitting disease, and that could be dehydrated and stored, ready to be sent to a battlefield or to outer space.

NASA-supported scientists have developed a polymer module similar to a cell membrane, and then use these membranes to create artificial cells called polymersomes. Polymersomes are stronger and easier to manage than their natural counterparts. For example, polymersomes could be engineered to target specific body locations, reducing undesirable side effects in other parts of the body. Pharmaceuticals that destroy cancer cells could be sent directly to a tumor, or the polymersomes could be designed to locate small tumor cells that have traveled throughout the body. Hypothetically, polymersomes could carry both the imaging aspects that locate a problem, and the medication that treats it. □

For more information about these and other technologies, visit the NASA Headlines Archive at http://science.nasa.gov/headlines/news_archive.htm.



CD/DVD Duplication Services & Equipment

- ⇒ Disc Duplication from \$1.50
- ⇒ Full Color Direct-to-Disc Printing
- ⇒ Top-Quality Media, 100% Accuracy
- ⇒ Fast Turn-Around Time
- ⇒ Standalone 1–7 CD Duplicators from \$889

7840 El Cajon Blvd. #205, La Mesa, CA
(619) 462-0702 • (619) 462-0711 Fax
www.affordable-duplication.com



EMERGENCY DATA RECOVERY NO DATA NO CHARGE

Any Media
Any O/S
Anytime



Authorized by All Major Manufacturers

www.cbltech.com
1.800.551.3917

Class 100 Clean Room
Data Return Via Internet

CBL Data Recovery Technologies
San Diego, California 92020
619.449.1200

Communication at the Speed of Life

By Stace Johnson

“Call an anesthesiologist!” Dr. Mercer barks to no one in particular as he’s examining a patient in the ER. A communicator on a lanyard around his neck picks up the order and transmits it wirelessly to a voice-recognition server, which identifies him, his location, and his need. It checks a database for a list of anesthesiologists currently logged in to the network, and notifies them individually that there is an emergency.

Claire is an anesthesiologist on the third floor. A similar communicator, clipped to her scrubs, says quietly, “Can you take a call from Dr. Mercer in the Emergency Room?”

“Yes,” says Claire. Mercer’s voice crackles from the speaker in the communicator.

“On my way,” Claire says as she stands up from her desk. She discusses the situation with Dr. Mercer as she makes her way through the hospital halls to the emergency room, picking up necessary equipment and medication as she goes.

The entire process of mobilizing an available anesthesiologist has taken less than five seconds.

From Science Fiction to Reality

The situation described above is fiction, but it’s not science fiction. Several hospitals around the country are adopting systems like this to improve hospital communications, increase productivity, save money, reduce noise and, ultimately, give patients better care.

Two notable hospitals at the forefront of this technology are St. Agnes HealthCare in Baltimore, Maryland (www.stagnes.org); and San Antonio Community Hospital (www.sach.org) in Upland, California. Both hospitals use wireless local area network (WLAN) technology to facilitate

communications and deliver hospital data to the people who need it, but their system implementations shine in different areas.

Hands-Free Communication

St. Agnes uses a communications badge by Vocera (www.vocera.com) that allows staff members to contact each other over the hospital’s WLAN. The badge itself weighs less than two ounces, can be worn around the neck or clipped to clothing, and has two buttons for operation. A microphone and speaker allow the wearer to use it without hands. The Vocera system software analyzes the voice data to route calls, and keeps track of which staff members are logged into the network at any given time.

Staff members can also use the badges to make standard telephone calls by pressing a button and speaking the number they want to dial. The system software automatically routes the call to the hospital’s phone system as an outgoing call.

In addition to calling individuals, staff members can broadcast calls to departments or even the entire network. In one case, when a patient was being combative, a nurse was able to summon help quickly by broadcasting a call to the rest of the staff. The badges announced her name and location, so available staffers in her area were able to respond.

The Vocera communications system also allows users to access their voice mail from the badge, and will even read their e-mail to them. These features significantly reduce the need for physicians to be tied to their desks to handle routine communications.

Leader of the PACS

San Antonio Community Hospital (SACH) also uses wireless badges

to improve communication between staff members, but their specialization in radiology creates specific needs for their hospital network.

SACH was an early adopter of wireless technology, starting with the standard wireless 802.11b protocol that can now be found in many homes and hotels. However, as they added wireless access points to expand the network, the SACH IT staff quickly learned that there were upkeep problems with that wireless model, especially in regard to security. Keeping multiple wireless access points up to date meant changing the configuration of each access point every time a new computer was added, a very time-consuming process.

In addition, they discovered a problem that occurred when wireless access points lost their network connections. Most wireless networks operate on a principle known as the “bug-light” phenomenon, which means that a wireless computer trying to connect to the network will choose an access point based on signal strength, just as nocturnal flying bugs will gravitate toward the brightest light in the immediate area. However, if that access point loses its network connection, it will still continue to broadcast its wireless signal. Computers in the area will attempt to connect to the network through the access point, but will not succeed.

To solve these problems, SACH implemented a solution by Trapeze Networks (www.trapezenetworks.com), which allows central configuration of all wireless access points. The SACH IT staff can use this system to manage network security and make configuration changes easily. Also, Trapeze eliminated the “bug-light” problem by having access points monitor their network connections. If the network connection goes dark, the access point will stop transmitting, so wireless receivers in the area can connect to another access point instead.

This wireless network solution allowed SACH to further utilize its

(continued on page 24)

Life

(continued from page 22)

Picture Archiving and Communications System (PACS), already one of the most advanced systems of its kind. Radiology archives can now be used virtually everywhere in the hospital, thanks to the design of the SACH wireless network.

ROI and TCO

Both hospitals have realized a large return on investment (ROI) in a short amount of time. Vocera estimates that its system saved St. Agnes

more than 3,400 hours per hospital unit in the first year. That translates to more than \$74,000 in time savings alone. The badges also decreased use of the overhead paging system by 94 percent, making the hospital a quieter, more peaceful place.

For SACH, total cost of ownership (TCO) was the key factor in moving to its wireless network. By utilizing Trapeze Networks' RingMaster software (www.trapezenetworks.com), the hospital was able to save 70 to 90 percent on its installation costs, and make sure it had exactly the coverage it needed before installing the first access point.

In the end, a patient's life is worth more than any ROI or TCO study. Instant communication and quick access to critical information can make the difference between life and death. Quieter hospitals mean better rest and faster recovery. In the case of both of these hospitals, the real winners are the patients. □

Stace Johnson is an information services technician and computer consultant in Colorado. He can be reached at lytspeed@gmail.com, and links to the sites mentioned in this article can be found on his Web site at www.lytspeed.com.

PCN
PRIORITY COMPUTER & NETWORKING
858-244-0434

Products 01
Services 02
Support 03
On-site 04

Acer 19" LCD
279.

80GB 8M SATA
59.00

60GB 8M Laptop
95.00

Servers
Desktop Pcs
Laptops
Peripherals

Don't stress yourself... Save Time and Money. Allow us to do the research while you do your thing..
Empowering your business
ON DEMAND

tiny Servers from Deep 14" **399.00**

RAID 0,1,5* Servers from Deep 23" **699.00**

1,599.00 Servers from Fully Redundant RAID 0,1,5*

COST-EFFECTIVE
Pre-Configured Systems
▶ High Performance ▶ High Availability
▶ Scalable ▶ RAID-Protected
▶ Space Efficient ▶ 3 Year Warranty*
▶ Linux Compatible* ▶ Highly Affordable



gopcn.com

Fax us or e-mail us your quotes or questions to sales@priority1pc.com
Hours: M-F 9-5
7918 Raytheon Rd. San Diego, CA 92111 (1 Block SE of Convo)
858-244-0434 Fax 858-244-0438
VISA MasterCard
DISCOVER NOVUS
Prices reflect a 3% cash discount.

Wireless Network KIT
Technician will install equipment, configure the network and add security features.
Just! 195.00

Kit Includes:
1x Wireless Router
1x Wireless Notebook or PC adapter
4x Wired PC/MAC
Additional cabling needed for wired PC's/Mac's NOT Included
FREE Home/Office Installation



Onsite Service
Virus/Spam Cleaning and Removal
System cleaning and Maintenance
Operating System Installation
System Diagnostics
Peripheral Installation
Wireless Network Setup
Call for Pricing/Details Immediate Availability
858-244-0435

MAC MADNESS!

The Mac Still Doesn't Listen Well

By Lucas Roebuck

Like a spouse who just doesn't care what his better half is talking about, the Macintosh hears its users, but doesn't listen. Talk may be cheap, but no amount of money today can buy you rock-solid speech-recognition software for the Macintosh.

The dream of oral/aural communication with our Macintosh has been something Apple fans have long desired. In fact, the Mac actually introduced itself back in 1984 with a voice synthesizer that wowed the Pac-Man generation. In the mid-'90s, Apple actually introduced basic speech-recognition technologies that allowed users to launch applications, change operating settings, ask the computer what time it was—and even exchange knock-knock jokes with their Mac. However, the software was buggy and underpowered back then.

Today, Apple still includes speech-recognition options with the Mac, but most users find the technology to be more of a toy than a useful system resource. And in an office setting, the computer could often interpret ambient noise as commands.

Joe: Computer, what time is it?

Joe's Mac: The time is five o'clock.

A co-worker: Joe, your presentation sure made a splash!

Joe's Mac: Now throwing the files in the trash.

Joe: Wait! Don't delete it!

Joe's Mac: The time is one minute after five.

Apple dealt with this issue by allowing you to toggle the microphone on and off using a hot key or the mouse. But if you have to use the keyboard or mouse to give voice com-

mands to your Mac, what's the point? You might as well give the commands with—ta da!—the keyboard and the mouse. Sure, it's not as cool as telling your computer to "Open Microsoft Word," but it is a heck of a lot faster and less cumbersome.

That being said, those interested in speech technology should take the Mac's built-in speech commands for a test spin. The way to get started is by going to your System Preferences (under the Apple menu), and clicking on the Speech icon (in the System pane). Apple has added speech commands to work with most of its iLife applications. Check it out—just don't expect too much.

Third-Party Solutions

Outside of the operating system, two applications have been released that have made speech recognition on the Mac much better: IBM's ViaVoice and MacSpeech's iListen (www.macspeech.com). Neither product is a clear winner today, but iListen shows the most promise. Meanwhile, Mac users probably want to avoid ViaVoice for now.

I had seen several demos of ViaVoice in the past, but never had the chance to try it for myself, so I contacted IBM to find out if I could get a review copy for this article. IBM's press flacks informed me that IBM no longer supports ViaVoice for the Mac, and that the company had licensed the product's name and technology to a third party: ScanSoft (www.scansoft.com/viavoice).

ScanSoft was about to send me a trial copy when the rep asked me what version of Mac OS X I was using. Of course, being a Kool-Aid-drinking follower of the Mac platform, I was running Mac OS X 10.4, also known as Tiger. The nice lady at ScanSoft told me that she couldn't

send me a review copy because the current version of ViaVoice didn't support Tiger.

I asked when ScanSoft would be releasing a patch, and not only could she not name a release date, but she couldn't even tell me that ScanSoft *would* be releasing a patch for Mac OS 10.4. As a rule of thumb, I stay away from software that isn't compatible with the version of the OS I am running—and especially from those who can't tell you *if* they are going to continue to support your platform.

You can find out if there is any progress from ScanSoft by checking the company's Web site: www.scansoft.com/viavoice/osx.

iListen

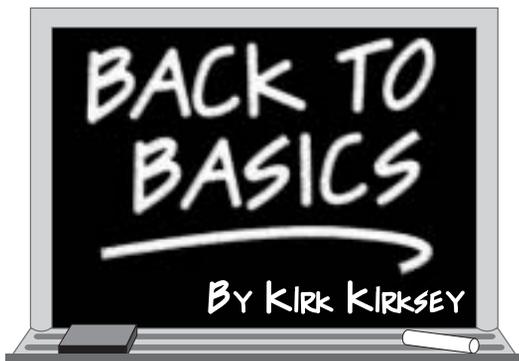
MacSpeech's iListen is probably the best program available for the Mac that does dictation in addition to system voice commands. The engineers at MacSpeech seem to understand why we want to use the technology, and have devised a system where you can train your computer to understand you better to make dictation more accurate.

Even after running iListen through the paces, I still found that it was a little rough around the edges, but I have no qualms in saying it's the best Mac speech-recognition software available to the public that runs on modern systems.

MacSpeech has even released a new version of iListen to support Tiger-specific features. If you're interested in serious speech recognition, iListen is the way to go. Just don't expect perfection from the get-go.

Like some spouses, it takes a lot of training to get your Mac to listen well.

Even so, iListen has brought Mac speech recognition a long way since my Mac Centris 660 AV was telling me knock-knock jokes in 1993. □



How to Keep Your Mean Machine Clean

Not long ago, I received one of those frantic, *I have-a-deadline-and-my-computer-is-making-a-howling-sound* calls from my downstairs neighbor. I rushed over, cracked open the case, and asked, "How often do you clean your computer?"

"I run virus protection and spyware scanners every day," she said.

"No," I said. "How often do you *clean* your computer? It's filthy in here."

From the looks of things, dust bunnies and fuzz had colonized the motherboard and all of the components. Pet hair from Wilma (the family schnauzer) was everywhere. The clacking noise was a cooling fan gone bad due to a severe case of gunk-jam. What a mess.

If your trusty home computer is more than 2 years old, and gets heavy use, its innards are probably getting a bit gross. To see why a computer can get so dirty, you'll need to ask some-

one with lots of body hair (perhaps your mother-in-law) to hold a forearm very close to your computer screen. See how the little arm hairs stand up? That is static electricity working like a dust magnet. This static pull is much stronger inside the case of your computer.

It doesn't take long before lots of dust, pet dander, smoke particles, and just plain gunk get sucked into the cracks, crevices, and surfaces of those statically charged boards and components. When this happens, heat cannot be dissipated effectively and, sooner or later, electrical components will get fricasseed.

The moral of the story: Just like armpits, computers need a good cleaning once in a while.

Clean

A clean computer starts with clean surroundings. Kitty cats and puppy

dogs wandering around computers are cute, but lots of pet hair can quickly foul cooling fans. It's a good idea to place your machine away from floor-level, A/C intake vents. And speaking of air conditioning, change your filters regularly. Clean filters catch lots of circulating dust.

If possible, place the case as high off the ground as possible. If you can't get your computer on a table surface, consider purchasing a CPU stand (a stack of old biology and English lit books works just as well). Last, but not least, keep smokers at bay. Over time, tobacco smoke leaves a very heat-holding residue on computer cards and, to make things worse, can discolor things like your keyboard keys and mouse.

Your main tool for cleaning your computer's insides will be a can of highly compressed gas. Ask most computer and office supply salespeople (and tech writers, for that matter), and they will tell you to buy compressed air on Aisle 14 just down from the envelopes. True, there is air in these cans, but some products also contain a dangerous propellant akin to the coolant used in refrigeration systems (reading the warnings on these products can be a real eye-opener). If the can is tilted too much or sprayed while upside

(continued on page 30)

VISIT US ONLINE AT WWW.COMPCITY.COM FOR OUR WEEKLY AD AND MORE SPECIALS

SPECIAL

Sony 8.5GB Double Layer DVD Writer

Model# DW-D26A Beige or Black Bulk
Write Speed: 4x Double Layer(DL) DVD, 16x DVD±R,
8x DVD+RW, 48x CD-R, 24x CD-RW
Read Speed: 48x CD-ROM, 16x DVD-ROM
-Store up to 7days of music on 1 DL DVD disc
-Compatible with DVD Players/DVD-ROM drives
-Backup all your precious video to DVD media

\$69.00

COMPUTER

Intel or AMD Computer Systems

Choose from Intel Celeron 2.53GHz or AMD Sempron 2500+
40GB ATA-100 Hard Drive 7,200RPM 2MB Buffer
64MB Video Adapter, 52x CD-ROM, Floppy Drive
Integrated 3D Sound AC '97
Integrated 10/100Mbps Network Adapter
USB 2.0 Front and Back Chassis
Keyboard, Mouse and Speakers

Starting at \$349.00

For server, rack, media PC and other systems, please call.

Full Service Computer Provider

- Upgrades, Diagnostics and Repairs
- Data Transfer, Backups and Protection
- Virus and Spyware Removal
- Onsite Repair Service and Networking including:
 - > Home or Business LAN/Wireless Solution
 - > Remote Office Connectivity Solution
 - > Network Management Solution

We Build Custom Desktop PCs, Rackmount Servers and Notebooks to Your Needs

We Welcome Government, Education and Corporate Purchase Order

6755 Mira Mesa Blvd., #114
San Diego, CA 92121
Sales Tel: (858) 622-1900
Fax Tel: (858) 622-1902
Email: Sales@compcity.com

We accept ATM Card, Cash &

Store Hours:
Monday-Friday .. 9AM-6PM
Saturday Closed
Sunday Closed

All systems come with 1-year parts/labor warranty. Prices and system configurations are subject to change without notice. Illustrations are strictly representational. We are not responsible for typographical errors. All trademarks are property of their respective owners.

Check Out Our Advertisers Online

On the ComputerEdge Web Site at:

www.computoredge.com

Look up **ComputerEdge Advertisers** by business name, product or service, and check out the links to their Web sites.

COMPUTOREDGE
San Diego's Free Weekly Computer Magazine

Basics

(continued from page 28)

down, this gas propellant can become a liquid. A prolonged stream on the skin can cause frostbite. On a sadder note, at least one of these cleaning products is associated with the death of a teenager who purposefully inhaled the gas. So—be careful with this stuff.

Before beginning, assemble your cleaning kit. We've already talked about compressed gas. One can will be plenty. You'll also need a microfiber cleaning cloth. A high-quality, long-bristle paintbrush will come in handy. I know some technicians who also use one of those handheld vacuum cleaners for sucking out dust gunk. Personally, I think these devices increase the risk of damage to cables and small cooling fans. So, for our purposes, we will not use mechanical suction.

Diving In

Step one in computer cleaning is to turn off the power switch. Just to be on the safe side, I like to unplug the power cord from the wall. If your computer's position is cramped—say, under a desk—take the case and place it on a workspace where you have 360-degree access to all areas.

Otherwise, you may simply end up pushing dust from one part of the computer to another. Pop the case. Before fiddling around with computer circuitry, it is always a good idea to discharge any static electricity in your body by touching a screw on the computer case. If you live in a static-filled environment, consider buying a grounding bracelet. This tasteful bit of geek jewelry is worn on the wrist and is connected to a grounded screw while you work.

Inspect your cables. Look for loose connections and frayed spots. Reseat loose ends and tape any bare spots you find. Everything solidly seated? OK. Now you're ready to blow—well, *almost*, anyway.

Watch out for those fans! All computers use fans to dissipate heat. Large fans will circulate air through external vents in the computer case. Newer computers also have small fans mounted atop the heat sink or CPU to pull heat away from motherboard circuitry. These fans are delicate. Strong blasts of gas can damage the blades and spindle, causing the fan to spin off-kilter. Don't blast the fan and cause it to spin. Instead, hold the fan steady with your hand or a small screwdriver, and then spray (or brush) around each blade. Now you are ready to blow.

Move over your components

shooting a stream of compressed gas into every nook and cranny you can find. If space permits, I like to stir up dust with my paintbrush and blow it away with a blast of gas. The brush also comes in handy for sweeping in, under, and around your fans, which can collect a lot of yucky stuff.

As you are cleaning, look for a removable air filter. If you find one, wash it with clean water and let it dry thoroughly before reinstalling.

You will probably see lots of dust in your PCI and AGP card slots. It is always a good idea to remove your cards and give the open slots a good dusting. Clean the gold contact points on your card with the microfiber cloth before reseating. Before sealing things back up, make sure air-blasting hasn't loosened any cables and that wires haven't moved too close to fan blades.

Good job. The whole process has taken less than half an hour. The dust bunny horde has been vanquished. Pet hair is exiled to the outer reaches. No more howling noises in the night. Your computer is spic and span once more.

Now, get back to work. □

Check out Kirk's new book, *Computer Factoids: Tales From the High-Tech Underbelly*, at www.computerfactoid.com or Amazon.com.

AllStates Mailing Services



Direct Mail Advertising Since 1983

- Laser Mail-Merge & Personalized Letters
- Full-Service Data Processing Center
- Mailing List Management & Data Entry
- High Speed Direct Inkjet Addressing
- Machine Labeling / Inserting / Folding / Tabbing
- Metering / Bursting / Affix Live Stamp
- Zip Sort, Tie, Tray & Bag for First Class and Bulk
- Fulfillment & Hand Work
- Postal Report & Delivery to USPS
- Quality Color Printing

CONFIDENTIALITY ASSURED

(858) 566-7158

FAX (858) 566-1068

www.allstatesmailing.com

email: mail@allstatesmailing.com

PICK-UP & DELIVERY

7756 Arjons Dr., San Diego, CA 92126

Glitch™ by Tom Klare



Worldwide & Product news reviews

By Charles Carr

reviews@computoredge.com

Summer's Here

Summer's here, and that means, in addition to lots of fun outdoor activities, there's some serious game-playing going on. There are all kinds of fantastic new (and pricey) first-person shooters like Doom 3, Half-Life 2, and Battlefield 2 out there, but what about gamers on a budget, who have desktop machines or notebooks with limited power, or gamers who have just wondered if there are any great older games out there they may have missed.

Look no further. Here is my personal list of the best first-person shooters (FPS) of the prior millennium. All these games run in XP and include plenty of puzzle-solving as well as good, old-fashioned bad-guy blasting. They also tend to be less violent and overtly graphic than most newer games.

In addition, several (notably Quakes I and II, and Unreal I) can be played in co-op mode, allowing two or more machines to be connected across an existing home network and experienced as a team. You haven't played these games until you've played them in co-op.

Best for last: You can find most of these titles on eBay (www.ebay.com)

or Half (www.half.com) for just a few bucks.

Let's get to it!

The List

- Quake I and its two add-ons: With Doom, this game pretty much started it all. 'Nuff said!

- Half-Life: Took the ball Quake threw and ran for the goalpost. Also, check out the Half-Life add-on pack Blue Shift.

- Unreal I: Still a great game. Lots of creepy places to explore and a dark mystery to uncover.

- Sin: Lots of fun, and looks surprisingly good for a game that's getting close to 10 years old. Yikes!

- Heretic II: A superb third-person adventure in the mold of Dungeons and Dragons.

- Draken: Fantastic overhead exploration and combat on the back of your curmudgeonly dragon, as well as exciting D&D combat on the ground and an engaging story.

- Alice: A twisted, action-packed take-off on Lewis Carroll's classic tale. Lots of puzzles and unimaginable locales.

- Indiana Jones and the Infernal Machine: Just about the best puzzle-driven game ever. My son and

Product Ratings

- Don't say we didn't warn you.
- What is that store's return policy?
- We've seen better; we've seen worse.
- You'll probably be happy you did.
- What are you waiting for?

I fire up Indy at least once a year, get hooked, and play it all the way through.

- Heavy Metal FAKK2: Looks great, plays great. Next to Indy, has some of the best puzzles ever.

- Trespasser: Take a nail-biting vacation on Michael Crichton's Lost World. Like Indy, I replay this game every year. Note: It needs a 30MB patch to v1.1 to correct problems with object manipulation (www.3dgamers.com/dlselect/games/trespasser/patch.full.zip.html).

- Aliens vs. Predator 2: Might be long in the tooth, but it's also scary as heck. Play it as a soldier, an alien, or a predator.

- Clive Barker's Undying: Pushed the mighty Quake 3 engine to its limits. Undying also has some of the most spectacular locales you've ever visited—and an engaging story, to boot.

- The Wheel of Time: Enter the world of Robert Jordan's timeless series, casting spells and solving puzzles galore. Complex and satisfying storyline told with many detailed

(continued on page 34)

REPAIRS • UPGRADES
\$35.00/Hour Reg.\$55
 Notebook/Monitor/Computer/Printer Repair
\$19.00—Install any component and set up driver while you wait.

Hi-Tech Computers
 4411 Mercury Street, Suite 110
(858) 560-8547

Hours:
 M-F 8-6
 Sat 10-4

HARDDISK ONLY

DATA RECOVERY

If We Can't Recover Your Data You Pay Nothing!!

* DOS *Windows *MAC *Novell *NT *OS/2 *Unix, etc.
 • Hard Disk/Floppy/Zip/Jaz/Optical/Syquest/Tape/etc. • Clean-Room Facilities

www.hodatarecovery.com

10633 Roselle Street
 San Diego, CA 92121 **24 Hrs/7 Days (858) 455-0277**

News/Reviews

(continued from page 32)

cut scenes.

- Medal of Honor, Allied Assault: Experience the bravery and battles of WWII in as real a manner as is currently possible. Much more intense than merely watching *Platoon* or *Saving Private Ryan*.

- Jedi Outcast: Nonstop, nonviolent action with plenty of puzzles. This game is a classic.

- Return to Castle Wolfenstein: This and Jedi Outcast were almost too new to make the list, but I just had to include them—they're that good.

Player-Created Levels

Note that, in addition to Quake I, II, Half-Life I, and Unreal I, there are also literally thousands of player-created levels for these landmark game engines. Just to get you started, here are my favorite Half-Life levels (so far).

- The Gate
- Todesangst (1, 2)
- USS Darkstar
- They Hunger (1-3)
- The Edge of Darkness
- Heart of Evil
- Timeline (1-3)
- Plan B
- Chaos
- Faraon (1-4)
- Boreality
- Science and Industry (a unique multiplayer experience that has a learning curve like a college course)

Check out www.planethalflife.com and www.planetquake.com for a complete list of levels, plus descriptions, ratings and user rankings.

Have Fun!

Every one of the above games can be installed on your laptop's hard drive with minimal footprint, most weighing in at less than half a gigabyte—some far less. Many will run without the install CD.

For those that won't, go to www

gamecopyworld.com and download a no-CD patch file—just make sure you retain the original CD as legal and ethical proof that you own the game, as well as any required ID codes needed to install and run the game.

Finally, since you can't change most notebooks' video cards, and their hard drives spin slower than desktop drives, adding memory is probably the single best thing you can do to increase gaming performance. Go for 512MB minimum, 1GB if you can spring for it.

Believe it or not (believe!), I first played every one of these games on a measly Compaq Presario PIII 1GHz notebook with 512MB. (BTW, that was one heck of a machine: fast enough for most applications, one-hand light, and ran on battery for three-plus glorious hours with a fan so cool and quiet you didn't know it was running.)

Have fun! The whole gang will be back next week with plenty of news and reviews. □

Super Savings @ The Geeks!
Amazing Prices, Huge Selection, Friendly Service
Backed by a 2 million cubic foot warehouse!

COMPUTER GEEKS

DISCOUNT OUTLET
& SERVICE CENTER

| | | | | |
|---|---|--|---|--|
|  <p>Apple iPod Photo 60GB MP3 Player (White) \$389.99 <small>Part #: M9830LLA</small></p>  <p>Apple iPod/HP 40GB Digital Music Player (White) \$299.99 <small>Part #: PE436AR</small></p> |  <p>Toshiba P4 3.2GHz 512MB 80GB DVD±RW 17" Widescreen & Win-XP \$1,199.00 <small>Part #: P5P30U-01Q001Z-R</small></p> |  <p>Gateway P4 3.06GHz 512MB 60GB CDRW/DVDRW 15.4" with Win-XP \$849.00 <small>Part #: 2900583</small></p> |  <p>Dell P4 2.4GHz 256MB 40GB CD FDD 14.1" & Win 2000 - B \$568.00 <small>Part #: C640-25B</small></p> |  <p>IBM PIII 1.0GHz 256MB 20GB DVD FDD 14.1" Win2000 \$379.00 <small>Part #: IBM3A0-8B</small></p> |
| <p>SHARP Flat LCD TV/Monitor with Speakers 17" \$349.00 <small>Part #: LL171MU-R</small></p> <p>TWO SIZES! 15" \$239.00 <small>Part #: LL151MU-R</small></p> |  <p>Sony VGF-AP1L Pocket 40GB MP3 Player \$259.99 <small>Part #: M7VIG400-2300-N</small></p> |  <p>Dell DJ15 15GB Digital Jukebox MP3 Player/Voice Recorder \$154.00 <small>Part #: MTDE0115-R</small></p> |  <p>PrimeFilm PF1800AFL 35mm Slide and Film Scanner \$119.95 <small>Part #: F18000</small></p> |  <p>HP PSC 1110 USB All-in-One Printer/Scanner/Copier \$79.99 <small>Part #: Q1652A</small></p> |
| <p>8x6-Inch USB Drawing Tablet with Cordless Pen and Mouse \$69.00 <small>Part #: WP8060M</small></p> <p>5.0MP 10x/3x Zoom Digital Camera \$299.99 <small>Part #: DX7590-R</small></p> <p>5.5x4-inch USB Drawing Tablet with Cordless Pen and Mouse \$49.00 <small>Part #: WP540M</small></p> <p>3.2MP 5x Digital Zoom Digital Camera \$69.99 <small>Part #: CX7310-R</small></p> | <p>BioStar M7VIG 400 Socket A MATX MB w/AMD Sempron 2300+ CPU \$99.90 <small>Part #: M7VIG400-2300-N</small></p> <p>Uniden EXAI3248 2.4GHz Cordless Phone with Digital Answering \$34.50 <small>Part #: TRU4485-2</small></p> | <p>BioStar Nvidia nForce3 250 Socket 754 ATX MB with Sound \$52.00 <small>Part #: NF325-A7-A01</small></p> <p>Uniden EXAI3248 2.4GHz Cordless Phone with Digital Answering \$19.00 <small>Part #: EXAI3248</small></p> | <p>LCD Monitor Arm Ceiling Mount (Black/Silver) \$39.00 <small>Part #: LCD-176</small></p> <p>LCD Monitor Arm Desk Mount (Silver) \$27.00 <small>Part #: LCD-195</small></p> <p>Slim Wall Mount Kit For LCD TV/Monitor (Black) \$12.00 <small>Part #: LCD-122</small></p> | <p>Uniden 2.4GHz DSS Two Handset Digital Cordless Phone \$34.50 <small>Part #: TRU4485-2</small></p> <p>Uniden 2.4GHz Extended Range Cordless Phone with Caller ID \$15.50 <small>Part #: EXI3246-A1</small></p> <p>Uniden 900MHz Dual Handset Cordless Phone with Caller ID \$17.50 <small>Part #: DXI986-2A1</small></p> |



Computer Geeks Discount Outlet & Service Center
1890 Ord Way Oceanside, CA 92056
Mon/Fri 10am-6pm - Sat 10am-4pm - Closed Sun

760.941.8778 - www.GEEKS.com

All prices listed are IN STORE SPECIALS ONLY and are not offered on the geeks.com website. Prices good in retail showroom only. Prices valid for 7 days from ad publication date. All offers subject to product availability. Product depictions for representational purposes only; actual product appearance may differ slightly. Not responsible for typographical errors. Prices subject to change without notice. All logos and trademarks are the property of their respective owners.

Calendar of Events

Saturday, July 23

■ **QuarkXPress 6, Beginning**—Part 1 of a two-part free class sponsored by San Diego Community College District, Continuing Education. Sessions will be held from 1:30 to 4:30 p.m. in Room 150 of the North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

■ **E-Bay, Introduction to Buying and Selling**—A free class sponsored by the San Diego Community College District, Continuing Education. Class will be held from 1 to 4:30 p.m. in Room 140 at North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

Monday/Thursday, July 25–Aug. 25

■ **Network+ Certification Training**—Get the fundamentals and networking practices required for all IT positions with this hands-on training. Also an excellent course for individuals pursuing Cisco certifications. The class runs Mondays and Thursdays from 6 to 10 p.m. Call 800-963-2373 for tuition and registration information or visit www.cesdtraining.com.

Tuesday, July 26

■ **Digital Photography, Sharing and Displaying**—A free class sponsored by the San Diego Community College District, Continuing Education. Class will be held from 9 a.m. to noon p.m. in Room 117 at North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

Wednesday, July 27

■ **Website Design and Usability**—Part 1 of a four-part free class offered by the San Diego Community College District, Continuing Education. The class runs from 5:30 to 9 p.m. in Room 140 at North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

Thursday, July 28

■ **Flash MX 2004 Pro, Intermediate**—Part 1 of a two-part free class sponsored by the San Diego Community College District, Continuing Education. The class will be held from 1 to 5 p.m. in Room 150 at North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

Friday, July 29

■ **Visual Basic (VB).Net, Beginning**—Part 1 of a two-part free class offered by the San Diego Community College

JULY

| | | | | | | |
|----|----|----|----|----|----|----|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

AUGUST

| | | | | | | |
|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | | | |

District, Continuing Education. The class runs from 9 a.m. to noon in Room 130 at North City Campus, 8401 Aero Drive in Kearny Mesa. Register in class. For more information, call 619-388-1800 or visit www.sdce.edu.

Saturday, July 30

■ **CCNA Certification Training**—This training prepares you to pass the certification exam. Test is included! The class runs two weekends, July 30-31 and August 6-7. Call 800-963-2373 for tuition and registration information. www.cesdtraining.com

Tuesday, August 2

■ **San Diego .NET Developers Group** will feature a presentation by Adam Calderon on "Exploring SQL Reporting Services 2005." Free pizza and soft drinks. This free meeting begins with a .NET 101 and Q&A session at 6 p.m. at Qualcomm Incorporated, 6455 Lusk Blvd. For more information, visit <http://sddotnetdg.org>.

Friday, August 5

■ **Southwest Computer User Group Conference**—This three-day event will include workshops, presentations, vendor faire, prize drawings, as well as up close and personal time with participating vendors. In addition, attendees will receive a t-shirt and welcome bag. The event will be held at the Town and Country Resort and Convention Center in San Diego. For details and rates, visit www.swugconf.org.

Thursday, August 11

■ **Adobe Photoshop**—A free seminar offered by Coleman College. Learn one of the hottest programs on the market. Whether you're a digital imaging novice, enthusiast, or professional, let us teach you how to work with software that lets you create without limits. This seminar is offered at both Coleman College campuses (La Mesa and San Marcos) and will run from 11 a.m. to 1 p.m. and 6:30 to 8:30 p.m. Space is limited. For more information or to RSVP, visit www.coleman.edu or call 619-465-3990 in La Mesa and 760-747-3990 in San Marcos.

Free events of a non-commercial nature will be listed in Calendar free of charge as space allows. Commercial events can be advertised in Calendar at a rate of \$25 for 25 words or less, with each additional word costing \$1. Anything separated by a space is considered one word.

In either case, type or legibly print your listing, including the date and time of your event, its location, and the name and phone number of a contact person. Calendar deadline is 4:30 p.m. on the Friday prior to publication date. Listings will not be taken over the phone.

All commercial Calendar listings must be paid in advance by check or money order. Enclose listing with payment, if applicable, and mail to Calendar of Events, c/o *ComputerEdge*, P.O. Box 83086, San Diego, CA 92138.

Hot On The Web

Michael Robertson Stakes Out Yet More New Turf

By Jim Trageser

The man who brought MP3-format music to the mainstream, and helped drag Linux to the home user's desktop, has now set his eyes on another online arena: Internet telephony.

Michael Robertson has stepped away from his day-to-day duties running Linspire (formerly Lindows), the friendly, easy-to-use flavor of Linux that, along with Xandros, is making a serious push to get Linux adopted by ordinary folks for their home computing use.

While Linspire and Xandros have yet to make a serious dent in Microsoft's market dominance for operating systems, both offer a low-cost alternative to Windows. For folks on a budget who nevertheless want to take advantage of all that the Internet has to offer, both Linspire and Xandros offer versions of Linux that are as easy to use as Windows XP—if not easier.

But Robertson is a restless soul. He built MP3.com into a major player in the music business, offering unsigned bands a way to reach an audience without needing the traditional music labels, and then sold it off to start Linspire.

As we reported in this space a few months ago, Robertson has already been busy with his new Internet telephony company, SIPphone (<http://sipphone.com>). But within the past few weeks, he's stepped away from Linspire entirely to focus his energies on building up SIPphone.

The "Baby Bells" are unlikely to be any more pleased with Robertson's innovation and aggressiveness

than were the music labels or Microsoft with his earlier ventures.

The Promise

As data-compression techniques have improved, the concept of making voice calls over the Internet has become feasible. Early attempts featured fairly poor audio quality, especially those efforts that used the Web. Rather than a one-to-one connection between caller and receiver, Web-based data transfer involves breaking up the data into numerous small packets and sending them each via the fastest route at the moment they are sent—and then reassembling them at the other end.

But that technology has improved, too—and now Internet telephony is so serious a technology that the traditional phone companies have sought permission to charge different rates to access their phone lines, depending on whether you're transmitting a phone call or e-mail. (So far the courts and government regulators haven't bought into that argument—for the time being, data is data.)

This voice-over-Net technology has gained its widest acceptance among online gamers—anyone who's played CounterStrike online has heard his teammates' tinny voices screaming out of the speakers or headphones.

What's Needed

Consumers are only now getting accustomed to the possibility of having their home phone service via the cable company instead of the local "Baby Bell." Getting used to having it over the Internet is going to take

some sort of big splash to gain widespread acceptance.

And that's exactly what Michael Robertson is good at—both creating workable business models and building a buzz.

Online telephony is obviously not going to replace traditional local phone service, because most of us still use our phone company to get online! Although, you could use your cable connection and then get Internet telephony to replace the "Baby Bell." So an existing cable or telephone connection is still a must.

The "Baby Bells" are unlikely to be any more pleased with Robertson's innovation and aggressiveness than were the music labels or Microsoft with his earlier ventures.

But what Internet telephone service *can* do is replace traditional long-distance service.

Robertson's SIPphone, for instance, includes a service that allows you to call standard landline and cell phones (as well as folks getting their phone service through the cable company). So Robertson—and many of his competitors, to be honest—is developing the technology to plug Internet telephony into the existing telephone infrastructure of landlines, cell phones, and cable phones.

Internet telephony isn't mature or stable yet—but it does seem likely that it's here to stay. With Robertson focusing his efforts and energies on developing it, betting against online telephone service doesn't seem to be too smart. □

Jim Trageser can be contacted via his Web site: www.trageser.com.

Web Directory

Bookmark our Web page, www.computoredge.com/sandiego, for easy access to these valuable Web sites:

GOVERNMENT

California State Government
www.ca.gov

City of San Diego
www.sandiego.gov

County of San Diego
www.sdcounty.ca.gov

Internal Revenue Service
www.irs.gov

INTERNET SAFETY

The CyberTipline
www.cybertipline.com

LOCAL INFORMATION RESOURCES

Your Source For All Things North County
www.NorthCountyInfo.com

PUBLICATIONS

COMPUTOREDGE MAGAZINE

COMPUTOREDGE®

San Diego's Free Weekly
Computer and Internet Magazine

www.computoredge.com

SHOPPING

EShoppingMatrix.com
www.EShoppingMatrix.com

TRAFFIC

Caltrans
www.dot.ca.gov

WEB DEVELOPERS

AAI - Top Quality! Get More Pay Less!
www.VisualArtsGroup.net

Coast to Coast Design

Affordable High Quality Web Design,
Print, E-Commerce, Shopping Carts,
Animation—619-255-1986
www.coast2coastdesign.com

SonicSpider LLC

www.esonicspider.com

WEB HOSTING

Active NetTech Web Hosting

www.activenettech-hosting.com

ECMS Hosting

Unlimited storage for \$7.50 per mo.!
www.ecmshosting.com

Host45 \$5 RAID Redundant Domain Hosting

www.host45.com

Register Your Domains

www.RegisterYourDomains.biz/

The Webs We Host: More Space/BW Hosting

www.thewebswehost.com

How Many Times Has Your Co-Location Facility Changed Its Name?

**Ever
Wonder
Why?**

Have you pulled a current
Dunn & Bradstreet financial
report on your co-location provider?



***If you're looking for a co-location provider that is not only redundant,
but financially secure as well, make the move to CASTLE ACCESS today!***

- Only Facility With SMC Smart Cabinets
- Each Cabinet Includes Two Independent Electrical Circuits to Independent PDUs.
- Each Cabinet Includes Two Bandwidth Connections With Divergent Paths to Separate Routers
- Customer Hardware Maintenance Area With Tools Provided
- Free Network Monitoring
- Free Remote Hands
- Digital Video Surveillance
- Biometric Fingerprint Scanner Access
- On-Premises Network Operations Staff 24/7, 365
- Redundant Data Center Grade Air Conditioning
- Three Fiber Backbone Providers With SONET Fiber Ring Protection
- Five Network Backbone Providers: AT&T, Sprint, MCI, Level 3, Global Crossing

***"We keep our
customers online
ALL the time."***



castle
ACCESS
A Co-Location Facility

9606 Aero Drive, Suite 1900 • San Diego • www.castleaccess.com • 858-836-0200

CLASSIFIEDS

Classifieds Now Accepted Online!

Visit our Web site at
www.computoredge.com/sandiego
Click on "Advertising"

Announcements

DONATE YOUR car, boat, RV, motorcycle, heavy equipment or . . . We handle all DMV paperwork and free towing. Tax receipt provided. Call 619-370-4000, e-mail weareone@silent-tears.org or visit www.SilentTears.us.

Computer Furniture

CUBICLES, SAVE money. Pre-owned, refurbished and new. Best service in town. Complete line of office furniture and accessories. Free space planning. Call **CUBICLES OFFICE ENVIRONMENTS** at 760-560-5800 or visit www.sandiegocubicles.com.

Instruction

COMPUTER TUTOR-EXTRAORDINAIRE, home/office, one-on-one. Windows 95/98/XP, Microsoft Office, QuickBooks, Photoshop, AOL, Internet, eBay and more. Computer setup/repairs. More than reasonable. Call 619-284-7479.

Miscellaneous Hardware

IPOD 10GB mp3 player, Macintosh, works perfectly, includes leather case, charger, and new earbuds \$75, call 760-522-2027.

Software

FILEMAKER PRO Database Creator wanted, Ric 760-943-7829 ext 11.

Services

DATA GUYS computer repair, small biz and corporate tech support. Call us today for a free onsite consultation at 619-606-6406 or visit www.dataguys.net. References available. The personalized service you expect!

Over 20 years of Experience
Authorized
Data Recovery Center

SAN DIEGO
DATA RECOVERY CENTER

● Deleted Files ● Photos ● RAID
● Hard Drives ● Floppies ● All Media

Former UCSD Computer Professor
858.523.1633 ☎ 619.977.7340
Free Evaluation
www.sandiegocomputers.com

Advertising Policy: The purpose of the classified advertising section of *ComputerEdge* is to provide a forum for communication within the computer market of the San Diego area. The publishers of *ComputerEdge* make no claims or warranties for the products or services advertised in *ComputerEdge*. It is the responsibility of the individual to verify the authenticity of any product or service prior to purchase. *ComputerEdge* will not knowingly publish any advertising which encourages the copying and illegal sale or distribution of copyrighted software. It is the responsibility of all buyers and sellers to comply with any licensing agreements in force. The publishers reserve the right to reject or cancel any ad which does not conform to the standards of the publication.

Instructions: Type or print your ad legibly. Anything separated by a space is considered a word. Legitimate hyphenated words are considered one word. Indicate on your ad the classified category under which you would like your ad placed. A phone number must accompany the ad. All classified ads are payable in advance of publication by check, money order, or credit card. **All classified submissions, changes and cancellations must be received prior to the deadline.** Classified advertisements will not be accepted over the phone. Please enclose ad with payment, if applicable, and any special instructions in an envelope and mail to: *ComputerEdge* Magazine, P.O. Box 83086, Attn: Classified Dept., San Diego, CA 92138. To submit your ad online, visit www.computoredge.com/sandiego. Click on Advertising. For more information, please call 858-573-0315.

Business Ads: Minimum charge – \$30.00 for 25 words or less, 50 cents per additional word. To run your ad in more than one classified section or in more than one issue, multiply cost accordingly (total cost would equal Ad Cost x Number of Sections x Number of Issues). Discounts for multiple paid ads are as follows: 6 ads – \$27.50 each, 9 ads – \$26.25 each, 12 ads or more – \$25.00 each. Multiple ads must run consecutively.

Free Ads: Private parties may qualify for ONE free classified ad every five weeks, 25 words or less. Each additional word, 50 cents. **Free ads may NOT be used to sell new equipment. Only Categories marked with a filled-in box qualify for private party ads.** Personal ads will be printed on a space available basis when judged not to be of a commercial nature. There is no responsibility on the part of *ComputerEdge* to notify parties who fail to comply with the "free ad" policy. Any questions regarding eligibility for free ads should be addressed, in writing, to the *ComputerEdge* Classifieds Department. One submission per month free. Each additional ad is \$30.00 for 25 words and 50 cents per additional word.

Deadline: Friday prior to publication, 4:30 p.m. for free private party ads. Monday prior to publication, 12:00 noon for paid ads. (Excluding Holidays.)

Categories:

- Accounting
- Announcements
- Business Opportunities
- CAD
- Computer Consultants
- Computer Furniture
- Computer Parts
- Desktop Publishing
- Disk Drives
- Handicapped/Special Ed
- Instruction
- Miscellaneous
- Miscellaneous Hardware
- Modems
- Multi-Users
- Networking
- New Computers
- Plotters
- Printers
- Publications
- Rentals
- Repair
- Services
- Software
- Supplies
- Swaps & Trades
- Used Computers
- Video Displays
- Wanted To Buy

HOME2OFFICE COMPUTING SOLUTIONS, INC. - BBB Member, Custom IT Solutions for San Diego businesses since 1994, tailored to organizations of 15-100 workstations and/or multiple servers. Free business consultation. Guaranteed satisfaction. Call 800-800-9H2O, 858-576-1426, or visit www.home2office.com.

Video Displays

17-INCH, 19-INCH, 20-inch, and 21-inch monitors in good to excellent working condition, free to qualified charities, call 760-740-0754.

19-INCH REALSYNC flat screen monitor, in excellent condition \$55, e-mail rharvir@gmail.com.

CRT MONITOR, flat 19-inch Samsung 955DF, 1600x1200 resolution, cables, manual, CD. For gaming, graphics, and video. Light home use, excellent condition \$75, Gary 858-449-5035.

MITSUBISHI DIAMOND PRO 19-inch flat panel CRT monitor, excellent picture, excellent condition \$100, call 951-302-1179.

USED 22-INCH Apple LCD (flat panel) monitor. Model m8149 emc: 1861. Tested and works great, ADC connector, no warranty. Buy as is!!! Price \$1000, David 760-639-1501.

VIEWSONIC 19-INCH monitor \$49, 17-inch \$24, 15-inch \$18. Working, good condition. Try before you buy, Michael 858-268-0435 or e-mail Mihali@cox.net.

Used Computers

COMPAQ EVO Pentium 4 2.4GHz SFP, 256MB, 40GB, 1.4 FD, DVD-ROM drive, SoundMAX network, 4 USB-2, keyboard, scroll mouse, Windows XP \$315. 19-inch/17-inch SVGA monitor \$20/\$30, Lee 858-695-2923.

DELL PENTIUM 4 3GHz, 2GB RAM, nVidia video card, ATI video capture card, Sound Blaster audio, 80GB HD, CD-RW drive, DVD-ROM, 21-inch Trinitron monitor, Windows XP restore CDs, MS Office \$650, call 619-871-5993.

DELL PENTIUM III, 600MHz, 128MB RAM, 98SE, 10GB HD, Word, Works, virus and firewall, monitor, keyboard, original disks and documents, clean \$200, Yvonne 760-746-9302 Escondido.

IBM THINKPAD A21m, 14-inch LCD, DVD, Windows, Pentium III 700MHz, 10GB HD, FD, infrared, 128MB RAM, USB, 2 PCMCIA, wireless \$450, call 858-337-3060.

LAPTOP: 2GHZ Celeron, 1GB RAM, 20GB HD, Windows XP, Office XP, wireless, 40GB external HD, excellent condition \$400, call 760-390-6547.

LAPTOP: ACER 732T Pentium III, 500MHz, 196MB, 8GB, Windows 98SE, CD-ROM, FD, 10/100 network, 56K modem, good condition \$350, Peter 858-484-5899.

LAPTOP: GATEWAY Solo Pentium III 600MHz, 64MB RAM, 6GB HD, 14-inch screen, CD-ROM, FD, modem, software \$280, call 619-303-4084.

LAPTOP: TOSHIBA 530CDT, Pentium processor, 96MB RAM, Windows 2000 OS, A/C adapter, Internet ready, wireless configured, sturdy, reliable \$85, call 619-260-1230 evenings or e-mail kendiego@yahoo.com.

PENTIUM 4 Intel motherboard 2.4GHz, 512MB DDR RAM, 60GB HD, DVD/CD-RW, 64MB DDR nVidia card, modem/network, Windows 2000 Professional included \$300, call 619-410-5292.

PENTIUM III 1GHz, 128MB RAM, 40GB HD, 48X CD burner, Internet connections, Windows XP with SP2, Office 2003, preinstalled, complete system \$150, call 619-519-8509.

PENTIUM III mid-tower, 800MHz, 30GB HD, 256MB RAM, Intel motherboard, CD-ROM, sound, Windows XP, Office XP, Internet ready and online, keyboard and mouse \$120, call 858-487-8119.

Wanted to Buy

CPU WANTED, AMD Athlon 1.4GHz, socket A462, Petr 858-689-8265.

XTREME GAME machine, Pentium 4 3.4GHz, 2GB PC3200 with chrome heat sink, GeForce 6800 Ultra, ASUS P4C-800E Deluxe motherboard, Sound Blaster Audigy 2, 120GB SATA, 2 optical DVD/CD-RW, 500-Watt power supply, brushed aluminum case with 4 fans \$1600 firm, Mike 760-458-8672.

CAREER OPPORTUNITIES

New Avenues

By Douglas E. Welch

As an independent high-tech consultant, I have the usual avenues for making money. One day I might be cleaning up spyware or viruses; on another day, I might be training a client on managing their e-mail. Other days, however, might bring a small network installation or the rebuilding of a crashed machine.

These are some of the traditional roles for a high-tech worker, but if you want to continue to build your career, you should always be looking for new technologies and new avenues for expanding your work and your earnings.

Blogging and Podcasting

I've been podcasting for about nine months now, and blogging for longer than that, but these two technologies were never a major part of my work. Finally, though, both are now making inroads into the minds of some of my clients. In fact, I recently acquired my first podcasting-related client. He has hired me to assist him in relaunching his blues music Web site as a blog and podcast site.

This is an entirely new avenue of work for me. While I have helped several friends get their blogs started, this is the first time it has resulted in actual billable hours. I realized a while ago that blogging software was a great way to let nearly anyone build their own Web site. Even more, they could begin publishing content to that Web site immediately, without worrying about the complexities of setting up a Web hosting account or learning HTML. This seemed the perfect application for some of my clients, who couldn't afford the development costs of a traditional Web site, but still needed some sort of presence on the Web. Even more, it felt very good to provide a way for these people to present their thoughts, work, and business to the Internet public.

Since I don't normally do Web site design, I was conceivably "missing out" on the income that might be gained from that work. I often had people asking if I did such work, but I usually referred the work elsewhere. Now, I can assist people in setting up basic sites and use this as a new avenue for my work. I knew in the back of my mind that this could be a lucrative new area for me, but only now am I starting to see the results.

The fact is, my own forays into blogging and podcasting provided me the training I needed in order to begin helping others. It is nice to see that such self-driven learning could eventually become part of my work.

Audio

In addition to the delivery side of the blogging and podcasting, I have also had to learn much more about audio recording, digital editing, and encoding. This new knowledge could prove to be a new avenue, as well. Each day I meet more and more people who are interested in pursuing their own shows.

My computer setup looks quite different than it did only a few months ago. The space between my keyboard and monitor was once only a place for Post-It notes, paper-clips, and the occasional penny. Now this space is occupied by a six-channel mixing board with a direct USB interface to my Mac G4. Next to that sits a microphone stand holding a large MXL 2001 studio microphone, like one you might see at a traditional radio station.

On my computer itself are several audio-editing tools. As I move into more consulting work on podcasting, my own experimentations will become yet another avenue for earnings. Even if I never make much money with my own podcast, it looks as if the learning opportunity provided by it will help to expand my career in new and interesting ways.

Who knows what new avenues may appear over the years? All you need to do is keep your eyes and ears open, and remain curious about new technologies. You need to think of your own forays into new areas as an investment in your future. You might find that some of them can open up entirely new areas of work, and introduce new groups of clients to your services. □

Questions and comments can be e-mailed to career@welchwrite.com. Career Opportunities is now available as an MP3 Audio Podcast. Listen on your computer, iPod, or other MP3 music player. Visit <http://welchwrite.com/career> for more information.

HELP WANTED

■ **VB PROGRAMMER.** \$25 per hour. Part time. Evenings and weekends. Work location Carmel Valley. Students welcome, call 619-808-8776.

Our Readers Are Your Next Employees

ComputerEdge readers are among the best educated, most highly skilled professionals in the industry. When they're looking for a career change, the first place they turn is to the Career Opportunities Listings in ComputerEdge.

Contact Grace in the Career
Opportunities Department

858/573-0315

PRODUCT INDEX

Computer Groups

San Diego Computer Society

Computer Mouse

Datel

Computer Sales & Service

AMC Computers

Chips and Memory.Com

PC Club

Data Recovery

ADS Data Recovery Experts

CBL Data Recovery Technologies

HDO Data Recovery Service

SDCom.com/1USRecovery.com

Disk Duplication

Affordable Duplication Services

IBM & Compatible Products

Best Buy Computer Sources

Best Deal Computer

COMP1

CompCity

Computer Depot Warehouse Superstore

CTP Computer

Datel

Micro PC Outlet

Microtron

PC Club

Priority Computer & Networking

Startech Computers

Technology Depot

Internet Services

American Internet Services

Castle Access

Complex Drive

EPhost

NetHere Inc.

Skyriver

Mailing Services

Allstates Mailing Services

Networking

Xetra Networks

Online Computer Sales

Computer Geeks Discount Outlet

PC Club

Portable Computers

Wombo, Inc.

Printer Repair

San Diego Computers

Repairs

AMC Computers

Hi-Tech Computers

PC Club

Toner Recharging

ECO Imaging

LaserQuick

Toners & Inks USA

Video Accessories

Mega Comm Technologies

ADVERTISER INDEX

| | | | | | |
|---------------------------------------|-------|---|----|--------------------------------------|--------|
| ADS Data Recovery Experts _____ | 42 | Computer Depot Warehouse Superstore _____ | 5 | PC Club _____ | 2 |
| Affordable Duplication Services _____ | 20 | Computer Geeks Discount Outlet _____ | 34 | Priority Computer & Networking _____ | 24 |
| Allstates Mailing Services _____ | 30 | CTP Computer _____ | 13 | San Diego Computer Society _____ | 16 |
| AMC Computers _____ | 21 | Datel _____ | 15 | San Diego Computers _____ | 18, 38 |
| American Internet Services _____ | 9 | ECO Imaging _____ | 41 | SDCom.com/1USRecovery.com _____ | 25 |
| Best Buy Computer Sources _____ | 23 | EPhost _____ | 6 | Skyriver _____ | 17 |
| Best Deal Computer _____ | 31 | HDO Data Recovery Service _____ | 32 | Startech Computers _____ | 27 |
| Castle Access _____ | 37 | Hi-Tech Computers _____ | 32 | Technology Depot _____ | 29 |
| CBL Data Recovery Technologies _____ | 20 | LaserQuick _____ | 41 | Toners & Inks USA _____ | 42 |
| Chips and Memory.Com _____ | 7 | Mega Comm Technologies _____ | 16 | Wombo, Inc. _____ | 18 |
| COMP1 _____ | 10-11 | Micro PC Outlet _____ | 19 | Xetra Networks _____ | 6 |
| CompCity _____ | 28 | Microtron _____ | 43 | | |
| Complex Drive _____ | 44 | NetHere Inc. _____ | 33 | | |

DIRECTORY OF SERVICES

Cabling

Quackenbush Communications

Voice and Data Network Cabling
Audio/Video/ TV Cabling
858-395-1007—www.QBNS.com

Computer Services

A+ Computer Service

Affordable/Reliable Computer Repair
Is Your Internet Getting Slow?
Call 619-540-9588 / Senior Discount

Computer Circulation Center

Buy, Sell, Trade, Laptops, PCs, Repairs,
Upgrades, Virus and Spyware Removal.
24-48 Hours Turnaround—858-573-0411

Geek Mercenaries For Hire

Troubleshooting, Upgrades, Virii, Custom
Work, Networks. Nerds for Housecalls 24/7.
619-665-5860 Mario hire@geekmerc.com

GizmoTek

PC/Network Services for Home/Business.
Install, Upgrades, Fix. Onsite Svcs
Paul 619-216-2580

McBride PC Services

Troubleshooting, Virus/Malware Repair
Home/Small Office Networking, 7 Days
www.harrydmcbride.com—619-420-9242

Supertek Computer Service

Sales, Service, Upgrades and Networks
Installation, Setup, Friendly Service
800-633-9499—www.supertek.net

Consulting

Home2Office, Inc.

2003 San Diego Better Business Bureau
Torch Award Winner! Free Network Needs
Analysis (Companies 15-100 Workstations)
Microsoft/CITRIX, Cisco, Apple Certified!
Expert Troubleshooting, Security, VPN,
Spam Solutions. WAN/LAN/Wi-Fi
858-576-1426 or 800-800-9H2O
www.home2office.com

Data Recovery

1 AAA - San Diego Computers.com

SD's #1 Largest Data Recovery Center
Emergency Mobile Data Recovery/Cleanroom
BBB Member-Insured and License #E81142
Hard Drives, Floppies, Tape, Flash Memory
www.SanDiegoComputers.com
Call 619-977-7340—858-523-1633

1A. Falcon Data Recovery

Best Prices, Service and Results.
All O/S and Media. RAID Specialists.
Free Evaluations/Local Pick-Up and Del.
Visit Us @ www.24hrdatarecovery.com
619-696-1370 or Toll Free 888-744-8808

1US Recovery/SDCom.com

Professional Data Recovery Services
On All Operating Systems and Media.
Free Diagnostic. See Our Ad. Toll Free
1-US-Recovery—www.1usrecovery.com

CBL Data Recovery Technologies, Inc.

Manager Doug Owens
San Diego 619-449-1200
www.cbltech.com—1-800-551-3917

Clear Computer Data Recovery

North County's Professional Solution
All Media, Fast Turnaround. Free
Diagnostic. Clearly the Best—760-402-5411

HDO Data Recovery Service

Competent, Professional Care Since 1987
Hard Disks, Floppy, Jazz, Zip, Syquest, Etc.
Free Diagnostic, See Ad—858-455-0277

Disk Duplication

Affordable Duplication Service

Highest Quality CD/DVD Duplication
Full-Color Direct-to-Disc Printing
Custom Media, Jewel Cases, Inserts,
Booklets, Fast Turnaround—Satisfaction
Guaranteed. CD/DVD Duplicators for Sale

or Rental. Please See Our Display Ad and
Web Site. www.affordable-duplication.com
619-462-0702

CDs First

DVD/CD Replication and Duplication
High Quality Best Price Fast Turnaround
Various Packaging, Call 760-521-8670

Golden Gate Software

CD Duplication — No Minimum
Low Prices — Quality Service
www.ggsft.com—858-274-5938

E-Commerce

Hardy Insurance

Insurance for Any Computer Business
Office and Prof. Liability, Workers Comp,
Group Health, Since 1986—619-285-9085

Macintosh Specialist

Macsimizers

On-Site Service for Home and Small
Office Needs. Serving SD County Since
1988. Richard Parcel—619-465-6499

Mad Mac's

Used Sales, Repairs
www.madcomputing.com
858-454-8535

Network Security

Software Blueprint Computer Consulting

Full Computer and Network Services
Microsoft Cert. MCSE 2003 +Security
800-840-2499—www.SoftwareBlueprint.com

Networking

JNet Services

Network Services for SMBs
Microsoft Certified
Windows 2000/2003, SBS 2000/2003
760-271-6528—www.jnetservices.com

(continued on page 42)

HP • Apple • Brother • Canon • Epson • Fujitsu • Konica • Kyocera • IBM • Lexmark™
Minolta • NEC • Okidata • Panasonic • Ricoh • Samsung • Sharp • Texas Instruments • Xerox™

Toner • Inkjets • Ribbons • Repairs

- ✓ Flat-Rate On-Site Repair
- ✓ FREE Phone Estimates!
- ✓ Up to 60% off Supplies
for Printer • Fax • Copier
- ✓ FREE Next-Day Delivery!
- ✓ Government Specialists



15% Off your First Order*
*Compatible Toner and Ink Cartridges

(619)441-5020
Toll Free (877)354-2045

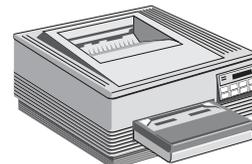
LaserQuick 
the laser printer experts

1365 N. Johnson Ave. • Suite 115 • El Cajon, CA 92020 • www.LaserQuick.com

PRINTER REPAIR

LASER • INKJET • PLAIN PAPER FAX

- FAST SERVICE/REPAIR
- FREE IN-SHOP ESTIMATES
- FLAT RATE
- NEW & RECYCLED TONER
CARTRIDGES & SUPPLIES



"For Sharp, Clear Prints and
Real Time Service, trust ECO."



Authorized
Printer
Repair



ECO Imaging Systems
5515 RUFFIN ROAD, SAN DIEGO, CA 92123

888-874-8221

DIRECTORY

(continued from page 41)

For information, contact Grace at 858-573-0315. Directory rates are as follows: 1 listing 1 week \$30, 6 weeks \$27.50 each, 9 weeks \$26.25 each, and 12 weeks \$25 each. One listing consists of four lines of up to 38 characters each. (First line is company name only.) Additional lines may be purchased at \$10 each. *The Directory of Services* deadline is at 4:30 p.m. on the Friday before the publication date. Directory submissions now accepted online! Visit www.computoredge.com/sandiego. Click on advertising.

Networking (continued)

North County Technology Group

We Manage Your Computers
Certified Small Biz Server Experts
www.nctg.com—877-839-3961

Programming

Golden Gate Software

Quality Work Using MS Technologies
VB.NET, Access DB, ASP.NET, SQL Server
CD Duplication. ggsft.com—858-274-5938

Sundance Software

Custom Programming using MS Access
For Small to Medium Sized Businesses
www.SundanceSoftware.com—760-944-6231

Repair

AAA Emergency PC Repair

Off Hours/Weekends/Holidays Immediate Svc
Temp or Perm Repairs On-Site/In Shop.
Pickup/Delivery Available—619-889-9674

Chips and Memory

PC Repair and Upgrade
\$25 Diagnostics
858-279-2447

Compushack

\$49.95 Flat Rate
Repair and Upgrade Any PC or Mac.
Fast Turnaround. Free Diagnostic.
Lowest Price in Town! Call 858-751-5665

Laptop Services

Repair Any Laptop. Fast Turnaround.
Best Prices in Town! Free Optimization
and Tuneup. Call for Price—858-751-5665

LaserQuick

Free Phone Estimates/1 Day Repair Service
Low-Cost Flat-Rate Labor (Free Cleaning)
619-441-5020—Toll Free 877-354-2045

MPCR (Mobile Portable Computer Repair)

On-Site Notebook/Desktop Computer Repair
A+, Toshiba, Compaq Certified Technician
760-434-8899 or www.mobilepcr.com

R & J Computer Repair

Free Diagnostics/Same Day Service
PC's, Laptops, Printers, On-site Mobile,
Projector Rentals—619-303-7637

Web Developers

AAA OneStop Multimedia Solution

DVD/CD Duplication, Web Design/Hosting
E-commerce/All Event Videography/Editing
Lowest Price Guaranteed. Free Estimate
Call 858-751-5665

AAI Web Graphics & E-Commerce Solutions

Our Prices and Completion Time Will Amaze
You! Top Quality Guaranteed. Free Consult
760-438-3030 www.VisualArtsGroup.net

Coast to Coast Design

Affordable High Quality Web Design/Print
E-Commerce, Shopping Carts, Flash
619-255-1986—www.coast2coastdesign.com

Sonic Spider LLC

Web Business Solutions/E-commerce
Web Development and Hosting
www.esonicspider.com—760-631-3085

Copier-Laser-Fax-InkJet Cartridges

TONER & INKJET

Cartridge Refilling / Recharging

InkJet HP/Dell/Lexmark: Black \$9.95/Color \$12.95
Toner Cartridges: Canon E-40 \$37.95, LC-50 \$48.95
Xerox: XD-100 \$52.95, Samsung ML-1210/1710 \$36.95
HP: 1000/1300 \$39.95, 4000/4100 \$62.95, 5L/1100 \$30.95
New EPSON/CANON InkJet Cartridges from \$4.95

Prices for Others: www.toners-inkjets.com

Toners & Inks USA Delivery in SD: 800.643.8875

San Marcos: 1195-B Linda Vista Drive • 760.744.5664

HARD DRIVE CRASH?

DATA RECOVERY EXPERTS

Network Servers, NT, Novell, UNIX,
Linux, Windows, Mac, DOS, OS/2,
Beos, ZIP, JAZ, RAID5, Optical,
CDs, Syquest, etc...

619.336.1400

24 Hours / 7 Days



www.adv-data.com
ADVANCED DATA SOLUTIONS, LLC

**FREE
EVALUATION**

**NO DATA . NO CHARGE
HIGH SUCCESS RATES
BEST PRICES**

20 Years Hands-On
Experience

Fast, Accurate, Confidential

Advertise on the ComputerEdge Web Site

for as little as

\$15 per week!

We will post a JPG of your ad and Web Shopper Listings on our Web site. See pricing below to find the right deal to fit your budget.

| Ad Size | Web Ad Dimensions | Web Shopper Listings | Weekly Rate | Rate for Print Advertisers |
|-------------|-------------------|----------------------|-------------|----------------------------|
| FULL | 7.375" x 9.875" | 100 | \$50 | FREE |
| 2/3 | 7.375" x 6.625" | 60 | \$45 | FREE |
| 1/2 | 7.375" x 4.875" | 45 | \$40 | FREE |
| 1/3 | 7.375" x 3.25" | 35 | \$35 | FREE |
| 1/4 | 5.25" x 3.25" | 25 | \$30 | FREE |
| 1/6 | 3.625" x 3.25" | 20 | \$25 | FREE |
| 1/8 | 3.625" x 2.375" | 15 | \$22 | FREE |
| 1/12 | 1.75" x 3.25" | 10 | \$18 | FREE |
| 1/16 | 1.75" x 2.375" | 5 | \$15 | FREE |

Advertisers running display ads in the printed magazine automatically receive a JPG of each printed ad and Web Shopper listings at no extra charge. The number of listings is determined by ad size. **Additional listings may be purchased by ALL advertisers at the following weekly rates:**

| 10 Listings | 25 Listings | 50 Listings | 75 Listings | 100+ Listings |
|-------------|-------------|-------------|-------------|---------------|
| \$13 | \$25 | \$37 | \$45 | \$50 per 100 |

858.573.0315 ■ www.computoredge.com



4941 D Clairemont Dr., San Diego CA-92117

Phone: (858) 490-0063 Fax: (858) 490-0065

www.microtron2000.com E-mail: sales@microtron2000.com

We are not responsible for typographical errors. Prices subject to change without notice.

All Prices Reflect a 3% Cash Discount Only. Cash=Hot Cash, Money Order Cashier Chk.

*** LOWS PRICES & BEST CUSTOMER SERVICE ***

*** WE WILL TRY TO BEAT ALL PRICES ***

STUDENT LAPTOP

1.2GHz Processor & 256MB DDR RAM
40GB HD & CDRW/DVD Combo
10/10 LAN, Sound, 56K Modem,
14.1" TFT LCD Screen
Upgrade to 512MB Memory.....\$29

ACER-2304 LAPTOP

15" XGA TFT (1024x768) Resolution 24-bit
Intel 1.3GHz M350 & 256MB DDR-266
56K Modem/LAN & Wireless LAN
CDRW/DVD Combo & 3D Sound
40GB 4200rpm Hard Drive
Video Intel 852GM integrated
Included Windows XP Home Edition

ACER-3002 LAPTOP

15" XGA TFT LCD 1024 x 768 Resolution
AMD-64 Semp 2800+ & 512MB DDR-333
40GB 4200rpm Hard Drive
CDRW/DVD Combo & Sound
Video SIS M760GX Integrated
3D Sound & 56K Modem
LAN & Wireless 801.11B/G
Included Windows XP Home Edition

ATI 9700 LAPTOP

15.4" WDS TFT Res. 2080x800
P-4 3.0GHz 1MB Cache
512MB DDR333 PC2700
128MB ATI-9700 Pro Video
60GB 5400rpm & DVD+RW
LAN, 3D-Sound, Speaker, w/Card Reader
Add Internal Wireless LAN...\$55

CPU'S

Intel CPU
Celeron "D" 2.4/2.5GHz 533 Box.....\$71/75
Celeron "D" 2.6/2.8/2.9GHz 533.....83/93/107
P-4 2.4 GHz 1MB 533FSB Box.....124
P-4 2.93GHz 533FSB OEM.....119
P-4 3.0/3.2/3.4GHz 800EOM.....169/191/256
P-4 3.0/3.2/3.4 GHz 800 Box.....183/215/283
P-4 2.8/3.0GHz 1MB 800FSB Skt-775...173/177
P-4 3.2/3.4GHz 1MB 800FSB Skt-775...216/277
P-4 2.8/3.2/3.8GHz OEM Skt-775...145/179/489
Intel 64 bit 3.0/3.2GHz 2MB Skt 775...225/278
Intel 64 bit 3.4/3.6GHz 2MB Skt 775...403/605
Intel 2.8/3.0GHz 2MB Dual-Core.....255/375

AMD CPU

2800 Athlon Skt-A & Semp Skt-754 OEM.....89/65
AMD Semp 2400/2500/2600 Box Skt-A...69/71/82
AMD Sempron 2800 OEM/Box Skt-A.....67/96
AMD 64bit 754 3000+/3300+ OEM.....101/139
AMD 64bit 754 2800+/3000+ Box.....111/142
AMD 64bit 754 3200+/3400+ Box.....182/218
AMD 64bit 939 3000+/3200+ Box.....143/183
AMD 64bit 939 3500+/3800+ Box.....256/325
AMD 64bit 939 3800+/4000/4400+ Box...269/363
Dual Core 64bit 939 4200+/4400+ Box...577/605

HARD DRIVE

Hitachi 80GB ATA/ SATA 7200RPM.....\$49/55
Max 40/80GB ATA133 7200RPM.....46/56
Max 80/120/160/200GB 8MB.....60/73/83/97
Max 250/300GB 16MB 7200rpm.....125/170
Max SATA 80/120GB 8MB 7200rpm.....62/78
Max SATA 160/200GB 8MB 7200rpm.....86/99
Max SATA 250/300GB 16MB 7200.....127/167
WD 40/80/120/160GB 7200RPM.....47/52/71/77
WD 40/80GB 8MB 7200RPM.....51/56
WD 120/160GB 8MB 7200RPM.....76/79
WD 200/250GB 8MB 7200RPM.....92/115
WD SATA 40/80/120GB 8MB 7200RPM...53/57/78
WD SATA 160/200GB 8MB 7200RPM.....85/97
WD SATA 250/320GB 8MB 7200rpm...114/129
WD Raptor 36/74GB 8MB 10K rpm.....109/175
Seagate SATA 400GB 7200RPM.....339

LAPTOP HARD DRIVES

20GB Laptop HD (Hitachi or Toshiba).....\$55
Toshiba 40/60/80GB 5400RPM 16MB...70/107/129
80GB/SATA 60/80GB 5400rpm.....139/159/179
Samsung 40/60/80GB 5400RPM.....65/79/102
Toshiba 100GB 5400RPM 16MB.....169
Hitachi 60/100GB 7200RPM.....189/239

SHUTTLE BAREBONE

SS56G (V2.0) "Skt-478".....\$175
SK43G AMD "Skt-A".....\$199
SN25P 64Bit "Skt-939".....\$369
Antec Cube Aria MicroATX Case.....\$95

STUDENT SPECIAL

Intel® Cel 1.8GHz or AMD® Semp 2300+
256MB DDR-333 & 80GB HD
52x CD-RW & FLP. DRIVE
32MB Video, 3D Sound & LAN
Mid Tower Case w/300W P/S. Black or Beige
Add Win XP Home/ XP Pro.....\$74/124

MT-SYSTEM 1

512MB Memory DDR-333
80GB Hard Drive IDE
DVD-RW IDE & Flp Dr.
32MB Video & 3D Sound Built In
10/100 LAN & ATX Case w/350-W
Add LCD 17" or 19".....\$189/260
Intel-P4VMA ECS 741GX

MT-SYSTEM 2

Intel P4 2.8GHz & 512MB Mem DDR-400
80GB HD & 16x DVD+RW Dual Layer
32MB Video, 3D Sound Built-In
10/100 LAN & USB 2.0 Built-In
Mid-Tower Case w/400Watt Power Supply
Asus P4S800-MX Asus A7V400MX
P4 3.2E GHz 533...\$389 XP 2800+ Skt-A...\$289
P4 3.4E GHz 800...459 XP 3200+ Skt-A...325

MEMORY

128/256MB DDR266 OEM/LIFE...\$15/18/22/25
512 MB DDR-266 OEM/LIFE.....41/45
256 MB DDR-333 OEM/LIFE.....24/26
512 MB DDR-333 OEM/LIFE.....43/47
256 MB DDR-400 OEM/LIFE.....23/26
512 MB DDR-400 OEM/LIFE.....43/46
256/512 MB COSAIR DDR-400.....31/48
1GB DDR-266/333 w/Ecc Register...129/131
1GB DDR-266/333 OEM/LIFE.....94/99
1GB DDR-400 Life Time/Kingston...99/109
Kingston 256/512 MB DDR-266.....28/49
Kingston 256/512 MB DDR-333.....28/49
Kingston 256/512 MB DDR-400.....28/49
KT Hyper-X 512MB DDR-400/533...99/125
256/512MB/1GB DDR-II 400.....33/52/88
256/512MB/1GB DDR-II 533.....33/55/109
128/256MB PC100 16Chips Life.....33/46
128/256MB PC133 1/2Sides.....30/39/33/45
512 MB PC100/133 25Sides Lifetime...75/75

LAPTOP MEMORY

128/256MB PC-100 8 Chips.....26/63
128/256/512MB PC-133 Life.....27/33/95
128/256/512 MB DDR-266 OEM.....22/27/52
256/512MB OEM/1GB DDR-333...27/51/115
512MB/1GB DDR-400 Lifetime.....69/131
256/512MB/1GB DDR-II-400.....51/89/129
128/256 MB RAMBUS PC-800.....45/85
USB Pendrive 128/256/512MB...\$14/21/38
USB2.0 Pendrive 1GB/2GB/4GB...59/95/145

OPTICAL DRIVE

Sony/LG/Artec 52X CD-ROM.....\$13.99
LG/Sony/Lite-On 16x DVD Beige/Blk...22/24/25
Optorite or LG/Lite-On 52x32x52.....22/23
Lite-On/Sony 52x32x52 Bi-Color/Black...22/24
LG/Samsung CDRW/DVD Combo.....31/37
Sony/Lite-On CDRW/DVD Combo.....34/39

DVD-REWRITERS

LG/Lite-On 16x DVD+RW D-Layer...43/51
Toshiba/Pioneer 16x DVD+RW D-Layer...45/51
Pana/Sony/NEC 16x Dual Layer.....45/47/50

SOFTWARE

WinXP Home/Pro/x64 OEM.....\$79/128/134
MS-Media Ctr 2005/ Win 2K Pro.....119/130
MS-Office XP S/Business & Pro.....174/287
MS-Office 2003 S/Business & Pro...224/285
Norton Int. Security/Anti-Virus 2005...29

MB & CPU BUNDLE

ECS 741GX Video, Sound, LAN
CPU XP Athlon 2800+ Skt-A \$109
ECS K8M800-M2 Sound, LAN
Athlon 64-Bit 3000+ (Skt-754) \$155

HOT DEAL SYSTEM

MSI K8N NEO Platinum Sound, LAN
Athlon 64-Bit 3300+ (Skt-754) \$219
ATI 9600Pro or GeForce 6200 256MB AGP
80GB SATA & 16x DVD+RW DL
512MB DDR-400 Memory
1.44MB Flp, 3D Sound, LAN
Super Case w/550W Power Supply
Asus P5P800 MSI K8T NEO-FSR
P4 2.8GHz 800...\$469 3000+ Skt-754...\$429
P4 3.0GHz 800...499 3200+ Skt-754...469
P4 3.2GHz 800...519 3400+ Skt-754...489

MT-AMD SPECIAL

Asus A8V Deluxe 64Bit Socket-939
512MB DDR400 Mem Kingston
Asus GF-6200 256MB 8x AGP
200GB SATA HD & 16x DVD+RW D-Layer
3D Sound & 10/100 Network Integrate
ATX Gaming Case 550Watt PowerSupply
Upgrade To 3200+ Skt-939...\$40

MT-SYSTEM 3

ATI 9600Pro or GeForce 6200 256MB AGP
512MB MEM DDR400 & 80GB SATA HD
Pioneer DVD-RW & 16x DVD-RG
1.44MB Flp & 3D Sound, LAN
Case w/400W P/Supply Beige or Black
P4P800-E Deluxe A7N8X-E Deluxe
P4 2.8GHz 800fsb...\$479 Semp 2400+ Skt-A...\$409
P4 3.2GHz 800fsb...539 Semp 2800+ Skt-A...429
P4 3.4GHz 800fsb...629 XP 2800+ Skt-A...439

MOTHERBOARD

P4P800MX/SE 800fsb Socket 478...\$59/90
P4P800-E/P4C800-E Deluxe.....111/169
P4S800-MX/ P5P800 LGA-775.....57/91
P5GD1-VM / P5GD1 LGA-775.....91/109
P5GD2/P5GD2 Deluxe LGA-775.....127/163
P5GD2 Premium 915P LGA-775.....211
P5AD2-Deluxe/Premium LGA-775...182/207
P5AD2-E Deluxe LGA-775 1066fsb...182
P5WD2-Premium 955x Chip SATA-2...211
Biosstar P4TVM Prescott w/V/S/L...43
Biosstar P4TGV-R & Intel 1.8GHz Combo.87
Intel D945GNTLKR Dual-Core LGA-775...129

AMD

ASUS A7V8X-X/ A7V400-VM.....49
ASUS A7N8X-X/ A7N8X-E Deluxe.....61/84
ASUS A8N SLI/Deluxe/Prem.....131/163/192
ASUS K8V-X/K8V-SE Del 64Bit 754...73/96
ASUS K8N/K8N-E Del 64Bit Skt 754...65/102
ASUS A8V-Dlx/ A8V-E Deluxe.....105/117
ASUS A8N-SLI/Deluxe Skt 939...138/167
Biosstar M7ZIZ&2300+CPU Combo.....91
ECS 741GX-M/K8M800-M2 Skt-754...39/63
MSI KT6V-LSR/K7N2 Delta2 LSR...49/56
MSI K8N-Neo Platinum 64Bit 754...95
MSI K8T Neo2-Flir 64Bit Skt 939...83
MSI K8T Neo4-Plat/SLI Skt 939...136/172

VIDEO CARD

ATI Radeon 7000 32/64MB PCI.....\$35/41
ATI Radeon 7000 32/64MB AGP.....24/31
ATI Radeon 9250/9550 128MB AGP...38/55
ATI Radeon 9600Pro 256MB AGP.....82
ATI/AIW 9600XT/128MB AGP.....151/181
ATI X800Pro/X850XT 256MB AGP...285/405
GF nVIDIA Mx4000 64/128MB.....27/38
GF Fx5200 128MB/Fx5500 256MB...41/69
Asus 6200 256MB AGP DVI/TV Out...82
NX6600GT/NX6800GT 8x AGP...159/345
16X PCI-EXPRESS VIDEO CARD
ATI RadeonAX300 128MB TV/DVI...52
ATI X700Pro/X850XT 256MB DDR...139/412
ATI RadeonAIW X600 256MB DDR...185
MSI NX6600GT 128MB DDR3...177
eVGA GeForce 6600 256MB DDR...132
MSI or eVGA6800GT 256MB SLI...349

SERVICE CENTER

SALES, UPGRADE, REPAIR, NETWORK
REPAIR ALL PROBLEMS PC & LAPTOP
SOLDERING, VIRUS, REINSTALL O/S
HARD-WIRE & WIRELESS NETWORK.
TOTAL SOLUTION FOR HOME, OFFICE
EDUCATION & GOVERNMENT

EXTREME SYSTEM

Asus P5GD2 DDR2 Motherboard (775)
ASUS A8N-SLI MotherBoard (939)
1GB Mem DDR-400 Life-Time
300GB SATA HD 16MB 7200rpm
16X DVD-RW Pioneer D-Layer
ATI X700Pro 256MB PCI-e
8-Channel HD Sound Int.
1Gig LAN & 1.44 Floppy
CoolerMaster Case w/500W Power Supply
P4 3.2E GHz 800...\$939 64Bit 3000+...\$865
P4 3.4E GHz 800...1005 64Bit 3500+...1025
P4 3.8E GHz 800...1275 64Bit 3800+...1065

ULTIMATE SYSTEM

ASUS A8N-SLI Dlx GF-4 Chipset Skt-939
ASUS P5AD2 Premium Skt-775
300GB Maxtor 16MB Buffer SATA
1GIG DDR-400 Dual Channel
GeForce 7800GTX 256MB PCI-e
Pioneer 16X DVD+RW SATA
9 in 1 USB Card Reader Int.
1-Gbit LAN & 8-Ch Sound Built-in
Thermal Shark Case + Antec 550W True P/S
P4 3.0GHz 2MB...1,799 3200 64bit 939...1,479
P4 3.2GHz 2MB...1,849 3800 64bit 939...1,589
P4 3.4GHz 2MB...1,979 4000 64bit 939...1,809
P4 3.6GHz 2MB...2,189 FX55 Skt-939...2,129

LCD & CRT SPECIAL

15" / 17" LCD MON...\$159/195
18" LCD MONITOR.....\$211
19" LCD MONITOR.....\$259
17/19" CRT 3yrs Warranty...\$109/129
17/19" E70F/E90F Viewsonic...\$132/189
20" P22F Res. 0.25dpi.....\$499

LOGITECH SPECIAL

5.1 Surround Sound
• THX® Certified
• Dolby® Digital
Logitech® Z-5500 500Watt....\$265
Logitech® Z-5300 280Watt....\$135
Logitech® X-530 70Watt....\$53

BUNDLE SPECIAL

Logitech® LX300/LX500...\$39/58
Logitech® Cordless LX-700...\$65
•USB & PS/2 •Opt Mouse •Enhanced Keys •Mult. Control
• MB M7IVz or P4TGV w/Video,Sound,LAN
• CPU Intel 1.8GHz or Semp 2300+
• Mid-Case w/400Watt P/S \$109

AMD & INTEL CPU FAN

Intel CPU Fan Skt-478.....\$11
• Thermaltake 512 Skt-775...\$35
• AMD 64Bit Skt-754.....\$15
• Cooler Master Hyber-48 AMD & Intel...\$49

GeForce 7800GTX 256MB PCI-e.....\$519

Asus P5ND2-SLI nForce-4 (Skt-775)....217
Audigy 2ZS 7.1 OEM/Box/Plati.....62/82/159
HP 16x DVD640i Pro Labels in DVD.....95
Pioneer DVD-RW 4x & 8x.....27/35
AMD Mobile Chip 3000+ 64Bit.....139
Intel P4 3.4GHz 800FSB (Skt-775).....248
D-Link 604 Router 4-Ports.....45
Lexmark Printer 2515/ HP Ink 78.....29/11
USB Keyboard/ Fordable KB P/S2.....8/15
Logitech WebCam/ Travon Tape 20GB...19
56K Modem/ Network Card PCI.....7/7
Linksys Wireless PCI/ Router GS.....65/79
Thermal Tsunami/Shark no-P/S.....105/139
Clear Acrylic Case no-Power Supply.....70