E.I.T. Links

From "self-service" to "room service" :
How Emerging Information Technology is changing the way we live

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"You cannot endow even the best machine with initiative;
the jolliest steam-roller will not plant flowers."
~Walter Lippmann

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> ### *Editor's Note:*
> **Please feel free to pass on the newsletter to those interested.** *Anyone wishing to receive future editions of the newsletter, please email me at:* **sknode@gmail.com.**
> **Note: This newsletter contains links found during Feb 2009, and all of the links were working at time of publication.**
> *Remember, all links here can be found at* www.steveknode.com/news_updates.htm and previous newsletters are available at: http://www.steveknode.com/newsletters.htm.

Links for this Issue

AI General

- Artificial intelligence -- child's play! – Digital Media Technology IDMT in Ilmenau now plan to teach even children what AI is all about. "To do this, we have developed a very simple computer game called 'Gorge'," says IDMT head of department Prof. Klaus Peter Jantke. "Gorge enables children to find out through play how AI works, because they can influence it themselves."

- SMEs could save millions – Small and Medium-sized Enterprises (SME's) could save a lot of money by incorporating artificial intelligence applications which are becoming standard.

- Stimulus Funds Will Go Toward New Data Center For Social Security Administration – Some of the stimulus money will be used to improve the Social Security Administration's data center, including the use of artificial intelligence techniques to search e-medical records for diagnoses that support a disability applicant's claim. The system will then coach claims examiners through the steps needed to determine and document eligibility.

- Did You Get My Resume? – The use of automated systems to read and analyze resumes is growing and improving.

Artificial Life

- Managing Energy with Swarm Logic – A startup based in Toronto says that it has come up with a way to reduce energy use by mimicking the self-organizing behavior of bees. REGEN Energy has developed a wireless controller that connects to the control box on a piece of building equipment and functions as a smart power switch. Once several controllers have been activated, they detect each other using a networking standard called ZigBee and begin negotiating the best times to turn equipment on and off.

Brain

- The NSA Wants to Know How and WHAT You Think – The National Security

Agency (NSA) is developing a tool that will be able to respond almost instantly to analysts' questions.

Data Mining

- [Data mining promises to dig up new drugs](#) – A robot scientist that can make informed guesses about how effective different chemical compounds will be at fighting different diseases could revolutionize the pharmaceutical industry by developing more effective treatments more cheaply and quickly than current methods.

Decision Making

- [That gut feeling may actually reflect a reliable memory](#) – A new study from Northwestern University offers precise electrophysiological evidence that such decisions may sometimes not be guesswork after all. The study links lucky guesses to valid memories and suggests that people need to be more receptive to multiple types of knowledge. (NOTE: More on this type of decision making, read BLINK or visit: http://www.gladwell.com/blink/index.html)

- [Linking Decisions and Information for Organizational Performance (Free registration required)](#) – An excellent report on decision making and business technology from one of the best thinkers, Tom Davenport.

Educational Technology

- [Artificial Intelligence: Is the Future Now For A.I.?](#) – A good discussion of where AI can become a leveraging factor in education.

- [Intelligent Tutoring and Individualized Homework Help to College Accounting Students](#) – The latest program from Quantum Simulations, this one focused on assisting accounting students. (NOTE: I have used the other Quantum software solutions and find them some of the most advanced automated tutoring systems available.)

Future

- [Beyond the crisis, mindboggling science and the arrival of Homo evolutis](#) (video) – One of the most fascinating videos ever, from Juan Enriquez. Not only does it touch on our current economic crisis, but it also gives an excellent update on how technology is about to explode!

- [Singularity, Part 1](#) – This the first essay in a series exploring if, when, and how the Singularity will happen, why (or why not) we should care, and what, if anything, we should do about it.

- [Singularity, Part 2](#) – This the second essay in a series exploring if, when, and how the Singularity will happen, why (or why not) we should care, and what, if anything, we should do about it.

Genetic Algorithms

- [Unnatural selection: Robots start to evolve](#) – Using a combination of neural networks and genetic algorithms, robots are learning to navigate and move in a manner similar to how humans learn.

- [5 ways Charles Darwin influenced tech](#) – On the 200th anniversary of Darwin's birth, an analysis of how his theories have impacted five key areas of technology developments, including genetic algorithms.

Information Visualization

- [Ready to Tell Your Friends (and Google) Where You Are?](#) – Where you are is as important as what you're looking for. That's why more and more services are looking to location as a filter for providing relevant information when and where we need it. So it only makes sense that Google - a company known for its ability to deliver relevant information - get into the location-aware app game.

- [Siftable Computing Makes Digital Data Physical](#) (video) – MIT students have created a set of 'cubes' that can interact with each other. The cubes can be used for

educational purposes to teach kids math, language, and chemistry skills.

- The Cellphone, Navigating Our Lives – The cellphone is the world's most ubiquitous computer. The four billion cellphones in use around the globe carry personal information, provide access to the Web and are being used more and more to navigate the real world. And as cellphones change how we live, computer scientists say, they are also changing how we think about information.

Innovation

- Physicist's vision for helping world's poor: self-adjusting eyeglasses – Eyeglasses using simple, self-adjusting technology are now poised to revolutionize the way the world's poor - and quite possibly the rest of us - see, potentially coming to the aid of billions who struggle to squint enough to farm, study, drive or hold down any job.

- What Are the Top 30 Innovations of the Last 30 Years? – After receiving some 1,200 suggestions -- everything from lithium-ion batteries, LCD screens and eBay to the mute button, GPS and suitcase wheels -- a panel of eight judges from Wharton reviewed and selected the top 30 innovations.

Intelligent Agents

- Intelligent Software Assistant – A spinoff of the CALO project (see the Feb 2008 newsletter for a link to CALO) combines traditionally isolated approaches to artificial intelligence to try to create a personal-assistant program that improves by interacting with its user.

Knowledge Management

- JHU Institutional Dashboard – Johns Hopkins Hospital has developed a dashboard which can be used to access information about many medical problems, including which members of the staff are experts in a particular area. Information about their skills, research interests, etc. is

easily obtained in this dashboard mashup.

- From Digital Immigrants and Digital Natives to Digital Wisdom – This excellent article outlines clearly how generations handle the web 2.0 progression differently. Arguing that digital technology can make us not just smarter but truly wiser, the author describes how tools that give us access to more information and enhance our analytical powers will both reshape what wisdom is and give us the power to be wiser.

Kurzweil

- Google, NASA, Kurzweil take tech into the future with new university – Singularity University (SU) will bring students together from around the world to study subjects like nanotechnology, biotechnology, human enhancements and artificial intelligence to see how the technologies can work together. SU's goals also include fostering professional networking and business creation.

Medical

- Scientists develop 'crystal ball' for personalized cancer treatment – UCLA scientists have tested a non-invasive approach that may one day allow physicians to evaluate a tumor's response to a drug before prescribing therapy, enabling them to quickly pinpoint the most effective treatment and personalize it to a patient's unique biochemistry.

- Robots May Perform Breast Biopsy in the Near Future – Researchers envision a day in the not so distant future when robots will be performing breast biopsy. Engineers have designed an artificial intelligence program that takes 3-dimensional information and feeds it to the robot that then guides a needle into a woman's breast to take a tissue sample.

- Wireless Drug Control – Electronic implants that dispense medicines automatically or via a wireless medical network are on the horizon. Such devices, implanted under the skin, would remove the inconvenience of manual drug delivery.

- Mobile phones aim to be a 'doctor in your pocket' – Not content with offering calls, texts and Internet access, the mobile phone industry is convinced it can help save lives and offer health services to millions worldwide.

- A Big Stimulus Boost for Electronic Health Records – There is a lot of money available for advancing record keeping in the medical arena. Starting in 2011, physicians using health information technologies, such as EHRs and electronic prescribing systems, will be eligible for $40,000 to $65,000, and hospitals will be eligible for several million dollars.

- Paper Diagnostics --- Diagnostic tools that are cheap to make, simple to use, and rugged enough for rural areas could save thousands of lives in poor parts of the world. To make such devices, Harvard University professor George Whitesides is coupling advanced microfluidics with one of humankind's oldest technologies: paper.

Military

- Explosives on a Chip – There is now an ability to fine tune explosives by putting highly-uniform copper structures incorporated into integrated circuits – then chemically converted to millimeter-diameter explosives.

- War Without Warriors – Robots programmed not just to analyze the foe but to kill him without waiting for orders, swarms of robot bird-sized drones, and mechanical companions for soldiers are just some of the more recent developments in the military robot arsenal.

- MIT Sending Smart Robots Into War Zones to Save Lives – MIT now has a robot forklift that can be used in a war zone to keep soldiers out of danger.

- Will robotics advance on the battlefield? – Interview with "I, Robot" author about how robots are likely to be used on the battlefield.

MISC

- Trackle – Trackle is a free service which embodies the latest in 'push' technology. Set up a trackle (there are hundreds already built) and when the information is available, it will be automatically pushed to you. (NOTE: This is very close in concept to a previous service I used, "Spy on IT".) Instead of searching for the information you need (self service), it is sent to you when available (room service).

- Intelligent Urbanization Initiative – Cisco has launched an initiative to help cities use technology to cultivate sustainable, intelligent industries as well as citizen services and overall economic growth. The initiative is called "Intelligent Urbanization."

- Special Reports 10 Emerging Technologies 2009 – Technology Review has published its list of the 10 emerging technologies for 2009. Included are such things as Intelligent Software Assistant, Paper Diagnostics, Liquid Batteries, etc.

Neural Networks

- Semiconductor Tech Diagnoses Eye Disease Over the Internet – Using algorithms similar to neural networks, this approach assigns a disease level to the eye image by looking at the same factors, mainly damage to blood vessels, that an eye doctor would.

RFID

- Compliance: The Key to Wide-spread RFID Adoption – Adoption of RFID on a wider basis will occur when the cost of encoding and applying an RFID tag is less than the cost of the tag itself.

- Wireless Detectors for Dementia – Researchers at the University of South Florida (USF) have developed a wireless network that evaluates walking patterns in an attempt to detect early signs of dementia.

Robots

- [A Robomedic for the Battlefield](#) – An associate professor of robotics at CMU has engineered a snakelike robotic arm equipped with various sensors that can monitor a soldier's condition. The robot can be wirelessly controlled via a joystick, so that a doctor at a remote clinic may move the robot to any point on a soldier's body to assess his injuries as he's being carried to a safe location.

- [Robot Forklifts For War Zones](#) – MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) are developing a semiautonomous forklift that can be controlled from a distance. The device will eliminate the need for people to drive forklifts to load and unload supplies at combat sites, where operators might need to run for cover.

- [NASA Fashions Mountain Climbing Robot](#) – NASA has developed a robot which can rappel over cliffs, climb steep slopes, thereby assisting in search-and-rescue operations.

- [Autonomous Robots Invade Retail Warehouses](#) -- Warehouses run by Gap, as well as Zappos and Staples now use autonomous robots to pluck products from their shelves and send them to you.

- [Autonomous Military Robotics: Risk, Ethics, and Design](#) – This report is an overview of some risk and ethics issues related to autonomous military systems.

- [Japanese Robot/Humanoid Innovations Update](#) – This is an excellent update on the latest Japanese robotic developments. An interesting video is included.

- [Robot uses human mind tricks to navigate](#) (video) – German engineers have developed a robot which learns by mimicking how humans navigate.

- [Robots that monitor emotions of ASD children](#) – Robots are loved by most children. In this experiment, a researcher has developed a method that uses physiological measurements, including heart rate, changes in the electrical properties of the skin (galvanic skin response), temperature and muscle response, to monitor the emotional state of individuals.

Search Engines

- [Searchme, A Visual Search Engine](#) – Searchme presents search information in a more visual manner, thereby improving how relevant links are identified.

Sensors

- [Smart homes foster independent living](#) – A smart home in Ottawa has been equipped with enough sensors to allow senior citizens to live more independently.

- [How's Your Date Going? Ask the Artificially Intelligent Table](#) – Three undergraduates at Carnegie Mellon University have applied computer technology to the science of romance with their EyeTable, an artificially intelligent dinner table that reads physical gestures and speech patterns and lets the participants know how the date is going—in real time.

- [Researchers in Wrexham University get closer to developing the kitchen of tomorrow](#) – There is now an advanced kitchen with many sensors, leading to the kitchen of tomorrow.

- [5 Companies Building the "Internet of Things"](#) – As the 'internet of things' gets closer (in which most objects will be able to communicate), five companies are leading the way.

Speech Recognition

- [Innovation: Speech prediction software](#) – The latest speech recognition development is covered in this link. This software can automatically filter out hesitations as well as partial words such as 'um' or 'er'.

Virtual Reality

- [Recruiting via Avatar: Santa Clara Law Hosts Its First-Ever Virtual-World Law](#)

[School Application Workshop](#) –. Santa Clara Law school held a school application workshop in 2nd life. Yet another example of how virtual worlds are being effectively used.

Web 2.0

- [Wikipedia founder Jimmy Wales explores where Web 2.0 will take us next.](#) – Jimmy Wales explores where we are headed with web 2.0. Some interesting developments are on the horizon.

- [How Businesses Can Use P2P](#) – Excellent analysis of how peer-to-peer (P2P) can be used for business purposes.

- [Biomed Experts](#) – Social networks are being used more than ever, this one for facilitating the sharing of information by biomed researchers.

- [Web 2.0 Finally Takes on Textbooks](#) – Web 2.0 is now being used to allow groups to collaborate on developing textbooks. Textbooks are developed using different business models and access approaches.