

E.I.T. Links

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

“If computers get too powerful, we can organize them into committees.
 That’ll do them in.” --Unknown

By Steve Knode, steve@steveknode.com

Editor’s Note:

Many more interesting activities to report as usual. Because the development of Emerging Intelligent Systems (EIT) continues to increase, I will attempt to publish the newsletter monthly rather than quarterly. Therefore, this issue contains only links found during July 2007.

Please feel free to pass on the newsletter to those interested. Anyone wishing to receive future editions of the newsletter, please email me at: steve@steveknode.com. Note: all of the links were working at time of publication. Remember, all links here can be found at www.steveknode.com/news_updates.htm

Links for this Issue

Future

- [Metaversa Roadmap](#)– This excellent document outlines the future of the web. Over the last year the Acceleration Studies Foundation has been researching this development and put together this outstanding document. A must read! STOPPED HERE
- [Professor Charles Nesson is Insane! \(video\)](#) – View this extremely interesting idea using 2nd Life to put on a course at Harvard. This is the latest progression in virtual worlds.
- [Create Your Own Virtual World](#) – Virtual worlds continue to emerge as useful applications in the “real” world. At this site,

you will see examples of several serious virtual reality applications.

- [The Cyborg comes to Second Life](#) – One of my favorite persons to follow is Professor Kevin Warwick (the scientist who puts chips in his own body). In this case, he has lectured on his exploits using 2nd Life to present his extreme ideas. Dr. Warwick is well respected, so his views and ideas are not to be taken lightly.
- [Awaiting Real Sales From Virtual Shoppers](#) – Now that the 2nd Life community has grown so large, companies are wondering just how to market their products in this virtual environment. Read about some of the ideas and successes here. (NOTE: NY Times requires free registration to read the article.)

Sensors

- [Can cyborg moths bring down terrorists?](#) – Yet another use of very small sensors, this time embedded in moths to enable soldiers to spy on terrorists.

Robots

- [Close to A.I. Robots For Home](#) – Robots for the home continue to emerge. Stanford’s Stair robot for example can carry out simple tasks, such as emptying the dishwasher.
- [Patent Awarded On Robot That Watches You](#) – The autonomous personal service robot watches its owner for signs of distress, includes sensors for smoke, heat, temperature and carbon monoxide. Equipped with mp3 player and internet

access, it can react to crises as they arise.

- [Taser, iRobot to produce robots for cops, military](#) – Robots armed with tasers are coming for police and military use. Within the decade, look for Robo-Cops or the Terminator.

Natural Language Processing

- [System lets troops practice working with virtual interpreter](#) – Now being introduced, a system that uses speech recognition, artificial intelligence and computer synthesized speech to train interrogators, at the Training and Doctrine Command Cultural Awareness Summit at The Palms.
- [JUPITER](#) – Want to know the weather anywhere in the world? Want a specific question about the weather answered (e.g., What's the temperature in Boston)? Want to ask the question in another language and get your answer in another language? Try the free Jupiter system, 1-888-573-TALK.
- [Voice searching being heard as an emerging technology | Seattle Times Newspaper](#) – Voice searching through large amounts of data is starting to emerge. Think of KITT from the Knight Rider series of years ago. We are close to having that capability.

Data Mining

- [A2iA's smart DocumentReader classifies all kinds of incoming mail](#) -- This new version of the product enables companies to classify all kinds of incoming mail automatically, both typed and handwritten, leading to significant time savings and cost reductions. The technologically advanced A2iA DocumentReader is also capable of understanding the *meaning* of whole letters, as well as other documents enclosed with them.

Brain

- [The Memory Hacker](#) – We now have the ability to have a silicon chip “talk” to the brain. The chip’s ability to converse with live brain cells is a dramatic first step toward an implantable machine that could restore

memories in people with brain damage. Remedying Alzheimer’s disease could be as simple as a hardware upgrade if this works out.

- [Mixed Feelings](#) – The senses that we are born with are not the only ones we can use. In this article, learn how you can see with your tongue, navigate with your skin or fly by the seat of your pants (literally). How researchers can tap the plasticity of the brain to hack our 5 senses — and build a few new ones.
- [Computer Model Behaves Like Humans On Visual Categorization Task](#) – In a recent test, computers were able to perform as well as humans on rapid categorization tasks, usually something humans are much better at. Understanding the brain mechanisms more and more will lead to other breakthroughs.
- [The Latest TV Remote Control? Your Brain](#) – Now you can use your brain as a remote control to move items. New technology from Hitachi controls electronic devices by reading brain activity.

Search Engines

- [First Semantic Search Engine?](#) – One company now claims to have the first “semantic” search engine. According to the company, newly available search functions can be used to give meaning and structure to wide-ranging information already on the web.

Kurzweil

- [Is AI Engineering the Shortest Path to a Positive Singularity?](#) – Published at Ray Kurzweil’s site, this lengthy article clearly outlines one approach to the Singularity. Laden with specifics, this is an excellent statement of where we are and where we need to go to get to the Singularity.
- [The Age of Virtuous Machines](#) – Yet another extremely interesting article at the Kurzweil site dealing with how the future could unfold.

- [The Singularity Institute for Artificial Intelligence](#) – *Videos* from the Singularity Summit of Fall 06 are now available at this site. Especially interesting are the ones featuring Ray Kurzweil, but all of them are riveting.

[Intelligent Agents](#)

- [New Breed of Digital Tutors Yielding Learning Gains](#)– Intelligent agent tutors are improving rapidly. Students who are in need of assistance can gain from using these tutors. More of them are starting to show impressive results.
- [Virtual Tutor Adapts to Student Limitations](#) UMind has taken eLearning beyond the pages of static text fed onto a computer screen. UMind's teaching tool adjusts to the strengths and weaknesses of each student. On average, estimates are that learning time is cut in half while student retention jumps by 35 per cent.
- [Computer Science Thesis Helps Train Firefighters](#) –Intelligent agents create various disaster scenarios, complete with images and maps, for firefighters to train on. Teams can make their own decisions and learn from their mistakes.

[Military](#)

- [Future Military Technology \(video\)](#) – This interesting video shows some of the more interesting military weapons of the future. Very intriguing demonstration.
- [Battlefield 'Bear' robot to rescue fallen soldiers](#) – A new method for rescuing fallen soldiers is now available. Rather than send out more soldiers to retrieve wounded comrades, there is now another option— Battlefield Extraction Assist Robot (BEAR).

[Artificial Intelligence - General](#)

- [Library of Congress to Outsource Auxiliary Cataloging Functions](#)– Even the Library of Congress is going to an automated system to catalogue records. Another example of how automation is improving and speeding up

the way in which we deal with information.

- [Signs That Can See](#) – Imagine watching an advertisement that is watching you. Sound creepy? Some billboards can already communicate by text or photo message with passersby, and researchers are now endowing these signs with artificial intelligence that can take cues from viewers' behavior.
- [Artificial Intelligence Is Lost in the Woods](#) – If you want to read one of the best and most intelligent arguments against the Singularity happening, this is must reading. Extremely well-written and informative. (NOTE: Remember, all Technology Review articles can now be downloaded as mp3 files for your listening on your iPod.)

[Neural Networks](#)

- [Customs paves way for one-stop border](#) – The customs department of New Zealand is going to experiment with using neural networks to identify patterns of suspicious behavior.
- [Legend Advisory's Artificial Intelligence Advises Decrease in International & Emerging Markets Allocations; Reduce Exposure to Small Cap](#) – One of the main firms using neural networks to identify patterns in the investment community has issued an advisory on asset allocation. AANN's forecasts, designed to look four-months ahead, have proven 74% accurate over the last decade with that rate climbing as learning capabilities continue to be refined.

[Medical](#)

- [Neuroarm: Navigating The Future Of Surgery](#) – Doctors are now experimenting with a new surgical robot designed to free them from the constraints of the human hand.
- [Virtual Human Lets Doctors See Inside Body](#) – By the use of a new “4D” technology, doctors can now go inside their patient's bodies and look around. It will help doctors study the genetics of diseases such as cancer, diabetes, muscular sclerosis

and Alzheimers. (NOTE: The fourth “D” is time.)

Simulation

- [Second Earth](#) – Soon we will have the world wide Simulation, a combination of 2nd Life and Google earth. Read about some of the more interesting aspects of that powerful combination. (NOTE: Remember, all Technology Review articles can now be downloaded as mp3 files for your listening on your iPod.)

Knowledge Management

- [How To Tell Stuff To A Computer - The Enigmatic Art of Knowledge Representation](#) – One of the most thorough and best written articles about the ways in which knowledge can be represented. This outlines very clearly how to get computers to recognize knowledge. (NOTE: There are several parts to the article.)

Future

- [Revolution, flashmobs, and brain chips. A grim vision of the future](#) – Want to see how the future world will look? Take a look at this sobering assessment of what is likely to take place.
- [Wisdom through Neural Macrosensing](#)– The future will allow us to combine neurosensors with our own brain. But, will this lead to greater wisdom? Read this provocative and interesting article and find out.
- [The Tech Lab: Niklas Zennstrom](#) – Yet another look at the future and what it will bring, this time focusing on internet communications.
- [The Future, Actually](#) – Still more predictions about the future, this time through the lens of several scenarios.
- [Scientists Apply for First Patent on Synthetic Life Form](#) – It has finally happened! Scientists have created a new synthetic life form, and they are attempting to patent it.

- [The day the world ends](#) – Like to know how the world ends? Read this very enticing account of exactly what happened when the world ended beginning in 2065.

Chatterbots

- [Newton, Einstein Go Digital](#) – If you wish to talk to Einstein and/or Newton, you may soon have your wish. This project is attempting to capture their wisdom in the form of a chatterbot with whom you could converse.
- [I Chat, Therefore I Am...](#)—What would two chatterbots talk about with each other? Could they initiate good conversation, generate witty responses, engage in stimulating discourse?

Decision Making

- [Five minds for the future](#)– *Five Minds for the Future*, a new book by Howard Gardner, is excerpted here. Read about the different kinds of minds that will be developed in the future.

Information Visualization

- [Sharing Data Visualization](#) – Read about IBM’s new software, [Many Eyes](#) which features unique data visualizations and adds a social aspect to the visualizations.
- [Microsoft Surface brings computing to the table \(videos\)](#) – If you have not yet seen the Microsoft Surface videos, they are dazzling! Watch how the data can be combined in this new type of interface. Many impressive examples of data visualization.
- [Telepresence TV](#) – The ability of two groups geographically separated to meet together just got easier and more realistic. Watch how “real” this telepresence system is.

Nanotechnology

- [Nanotechnology: The Future is Coming Faster Than You Think](#) – The latest official government report on where we are and where we are headed with the development of Nanotechnology. Very thorough and insightful. Note the title!

- [Nanotechnology Takes Off \(video\)](#) – Another impressive video illustrating how nanotechnology offers the potential to solve many problems---this time disease and global warming.
- [NISE NETWORK: SMALL IS DIFFERENT: PODCASTS](#) – This site offers an excellent series of podcasts on the developments in nanotechnology. (NOTE: I now have only about 3 songs on my iPod; the remainder of the space is occupied by interesting podcasts that I listen to during my workouts.)