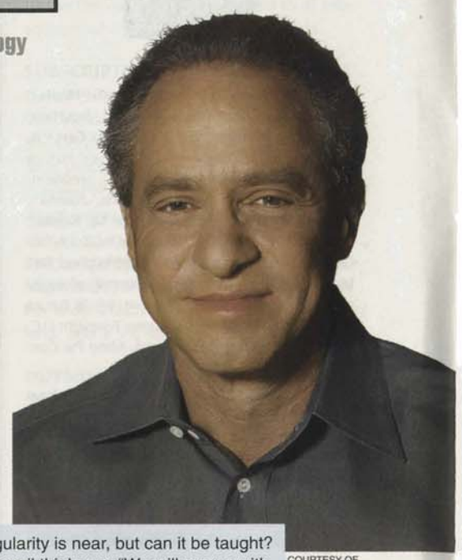
Technology

Singularity University Set to Open

Silicon Valley VIPs open school to study technology trends.



COURTESY OF RAY KURZWEIL

The Singularity is near, but can it be taught? Ray Kurzweil thinks so: "We will merge with technology. It's now in our pockets but it will merge with our bodies and brains. These are the kinds of issues we will be addressing at Singularity University."

Inventor and futurist Ray Kurzweil says you *can* predict what will happen in the decades ahead. He and some friends from Silicon Valley are opening a school to teach you how to do just that.

"Common wisdom says you can't predict the future," says Kurzweil. "If you measure the underlying information attributes of technology, it turns out to be remarkably predictable. What is predictable is exponential growth. Exponential growth is quite daunting."

So daunting and so certain will be the pace of rapid technological change, says Kurzweil, that the average human born during the twentieth century can scarcely contemplate how this growth will disrupt businesses and create new areas of opportunity in the century ahead.

Along with partners from Google, NASA–Ames, and the X-Prize, Kurzweil has established a nine-week summer course (paired with shorter executive sessions to run throughout the year) to teach the world's brightest graduate students how to bring the power of technology to bear on problems that today seem insurmountable: These grand challenges include poverty, bioterrorism, and climate change. The Singularity University, as the new endeavor is being called, will meet at the NASA–Ames campus in Silicon Valley beginning in the summer of 2009.

"There are many organizations around the planet—MIT, Stanford, University of Tokyo—that offer graduate-level programs in which individuals dive down deep into these issues," said Peter Diamandis, CEO of the X-Prize Foundation and vice chancellor of the University. "But there are few institutions that offer a much broader view, that look at what are the biggest issues and grand challenges on this planet and how do we apply these technologies to address them."

Singularity University will offer courses in 10 future-related academic tracks:

- Future Studies and Forecasting
- Networks and Computing Systems
- Biotechnology and Bioinformatics
- Nanotechnology
- Medicine, Neuroscience, and Human Enhancement
- AI and Robotics
- Energy and Ecological Systems
- Space and Physical Sciences
- Policy, Law, and Ethics
- Finance and Entrepreneurship

The summer program will encourage students to take courses outside of what they consider to be their fields of expertise. Devotees of artificial intelligence might focus on neuroscience, for instance. At the end of the summer period, students will work together in teams on projects related to a future challenge, such as predicting or modeling for a flu pandemic or applying artificial intelligence to a seemingly unrelated dilemma, such as resource scarcity.

"Paul Saffo and I will be involved in the future studies track," Kurzweil told THE FUTURIST. "We'll be studying how exponential growth affects all of these areas of information technology, which aspects of technology have proven to be predictable and which aspects have not, and how we can design our technology projects to be appropriate for the world when the projects finish."

Some people in the futurist community remarked that the scope of the school was not quite broad enough, and that an important human element was missing.

"As sorry as I am to say it—there are some very good people, folks I admire and respect, who are on the faculty and advisor list—this institution isn't what we need in an era of uncertainty, crisis, and potential transformation," says Jamais Cascio, senior fellow at the Institute for Ethics and Emerging Technologies and founder of OpenTheFuture.com. "A useful Singularity University (or whatever it would be called) would be one that dove deeply into the nature of disruption, how society and technology co-evolve, and how we deal with unintended and unanticipated results of our choices."

Regardless, the school's founders and partners are hopeful that the program will inspire new approaches to the big dilemmas of the twenty-first century.

"These are significant challenges," said Pete Worden, NASA–Ames Research Center director. "The technologies that the Singularity University is going to be pursuing, in terms of biological sciences, AI, and nanotechnology, are exactly what we need to assist in these things."

—Patrick Tucker

Sources: Singularity University, www.singularityu.org.
Jamais Cascio, Open the Future, www.openthefuture.com.

PHOTOS.COM

Business professionals consult their smart phones. These devices remain very much in demand, even while sales of other cell phones plummet.

Smarter Smart Phones

A mechanism that accelerates personal computers' performance might work wonders if placed inside new cell phones, according to a European Union funded research team, eMuCo Project.

The multi-core processing unit, as the mechanism is called, consists of a computer chip that has two or more processing cores, which calculate data. Multi-core processing units are common in desktop computers today since they have double the power of their single-core predecessors. The eMuCo Project hopes to give the same upgrade to smart phones, the highly popular category of cell phones that feature Web-based amenities like Internet access and MP3 players. The finished products might give consumers more features while requiring less battery power.

"With the recent advances in wireless networks and the exponential growth in the usage of multimedia applications, multi-core platforms point to be the solution of future mobile devices. With them, a new paradigm has emerged," says Maria Elizabeth Gonzales de Izarra, a researcher with the eMuCo Project.

Unlike present-day smart phones, whose single-core chips all work overtime to power both the phone and its Web-browser applications, the multiprocessors' cores split up work—one core will maintain phone service while another enables Web browsing, and each powers down when not in use.

There are currently many Web pages that smart phones are just not powerful enough to display, notes Jason Parker, senior project manager for smart-phone manufacturer Symbian.

"Take a typical MySpace home page as an example," says Parker. "It will probably include a number of plug-ins for media that have been designed for a desktop environment. As a result, a PC may easily use half its CPU capacity to display some seemingly trivial item of content." A multiprocessor-equipped smart phone will not run into this problem; it will be using the same systems that desktops use.

Cell phones have been a tough sell in the past year due to the recession, but smart phones were one glimmer of hope, according to market-research firm IDC. Their sales shot up by 22.5% from 2007 to 2008 worldwide, and by 70% in North America. It seems that cell phones can retain their market shares if they offer new products with good enough features. Multiprocessors may be the power-up that the cell-phone market needs.

"As long as developers continue to enhance applications, then this segment will be a silver lining in an otherwise gloomy market," says IDC senior research analyst Ramon Llamas.

—Rick Docksai

Sources: Ruhr-University Bochum, www.ruhr-uni-bochum.de.
Symbian, www.symbianone.com.
"Smartphones offer hope in declining cell phone biz" by Marguerite Reardon. CNET News, http://news.cnet.com.

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