



ROBOT LEARNS TO USE TOOLS

The UMass Mobile Manipulator, developed at the University of Massachusetts Amherst, is able to learn to use objects that it has never encountered before.



Photo: Dov Katz

The Robot, named "UMan" uses a regular webcam to look down at a table from above. By analyzing differences between adjacent pixels, it guesses where an object's edges might be found. Then it prods the object and, on the basis of how it moves, revises its estimate of the object's shape. It continues shoving the object around, observing how its parts move in relation to each other.

Source: Technology Review <http://www.technologyreview.com/Infotech/21027/?a=f>

U.S. FREEZES SOLAR ENERGY PROJECTS

Faced with a surge in the number of proposed solar power plants, the federal government has placed a moratorium on new solar projects on public land until it studies their environmental impact, which is expected to take about two years. The decision has caused widespread concern in the alternative-energy industry, as fledgling solar companies must wait to see if they can realize their hopes of harnessing power from swaths of sun-baked public land, just as the demand for viable alternative energy is accelerating.

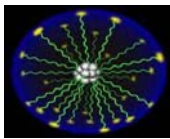
Much progress has been made in the development of both types of solar technology in the last few years. Photovoltaic solar projects grew by 48 percent in 2007 compared with 2006. Eleven concentrating solar plants are operational in the United States, and 20 are in various stages of planning or permitting, according to the Solar Energy Industries Association.

Source: New York Times <http://www.nytimes.com/2008/06/27/us/27solar.html?scp=1&sq=bureau+of+land+management&st=nyt>

NANOPARTICLES ENABLE ORAL DOSES OF POTENT DRUG

Children's Hospital Boston researchers used protective nanoparticles to turn a potent anticancer medicine TNP-470, into a nontoxic drug that can be taken orally.

Researchers created a new "Lodamin" formulation by surrounding the TNP-470 molecule with nanoparticles known as polymeric micelles that protect it in the stomach, allowing it to reach and accumulate inside the tumor.



Lodamin Nanoparticle

Now that it can be taken orally, Lodamin could be used as a preventative therapy for high-risk patients or as a chronic maintenance therapy (to prevent metastasis) for a variety of cancers. It could also be used for other diseases that involve aberrant blood-vessel growth such as age-related macular degeneration and arthritis.

Source: Children's Hospital Boston <http://www.childrenshospital.org/newsroom/Site1339/mainpageS1339P1sublevel440.html>

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THE FUTURE OF ELECTRONIC PAPER



Electronic paper is now closer than ever to changing the way we read, write, and study -- a revolution so profound that some see it as second only to the invention of the printing press in the 15th century. Made of flexible material, requiring ultra-low power consumption, cheap to manufacture, and most important, easy and convenient to read, e-papers of the future are just around the corner, with the promise to hold libraries on a chip and replace most printed newspapers before the end of the next decade.

Source: The Future of Things <http://thefutureofthings.com/articles/1000/the-future-of-electronic-paper.html>

GET OUT OF YOUR OWN WAY

The brain appears to make up its mind 10 seconds before we become conscious of a decision, and "neural static" -- waves of disruptive signals -- precede an error by up to 30 seconds, neuroscientists have found.



Through a series of intriguing experiments, scientists in Germany, Norway and the U.S. have analyzed the distinctive cerebral activity that foreshadows our choices. They have tracked telltale waves of change through the cells that orchestrate our memory, language, reason and self-awareness.

While inside the brain scanner, students who volunteered for the research, watched random letters stream across a screen. Whenever they felt the urge, they pressed a button with their right hand or a button with their left hand. Then they marked down the letter that had been on the screen in the instant they had decided to press the button.

Studying the brain behavior leading up to the moment of conscious decision, the researchers identified signals that let them know when the students had decided to move 10 seconds or so before the students knew it themselves. About 70% of the time, the researchers could also predict which button the students would push.

Source: Wall Street Journal <http://online.wsj.com/article/SB121450609076407973.html?mod=blogs>

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SLEEP MACHINE

New neuroscience findings suggest that sleep plays a critical role in flagging and storing important memories, both intellectual and physical, and perhaps in seeing subtle connections that were invisible during waking.

Source: Science Times
