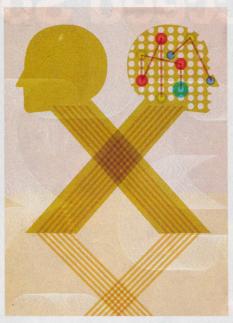


spectrum 12.10





Shades of the Singularity

22 RAY KURZWEIL'S SLIPPERY FUTURISM

He says that ultra-advanced technologies will let us live on indefinitely, sustaining our consciousness. Should you believe him? *By John Rennie*

28 THE BRAIN OF A NEW MACHINE

Will a brain-inspired chip that mimics how neurons process information finally lead to a true artificial intelligence? By Massimiliano Versace & Ben Chandler

36 COMPUTING THE SCENE OF A CRIME

Human bias can taint crime scene investigations, but computational forensics tools offer objectivity with fewer errors. *By Sargur N. Srihari*

42 HOW THE FREE MARKET ROCKED THE GRID

That competition will lead to lower prices is as close to a universal truth as economics gets. Electricity is an exception. *By Seth Blumsack*

48 3-D WITHOUT FOUR EYES

The 3-D displays now coming to market are using a variety of technical tricks to shed their spectacles. *By Mark Harris*

COVER: BRAIN IMAGE: ISTOCKPHOTO; PHOTO-ILLUSTRATION: MARK MONTGOMERY THIS PAGE CLOCKWISE FROM TOP LEFT: MATT MAHURIN, CHAD HAGEN, EFE/EL PAIS/AP PHOTO, DAN SAELINGER





UPDATE

9 CAN CARBON PUT COPPER DOWN FOR THE COUNT?

In the nano realm, copper vias just won't do the job. By Joseph Calamia

- 10 THE WATER/ENERGY GAME
- 11 SMARTS FOR SOLAR ARRAYS
- 12 A TRANSISTOR TRIFECTA
- 13 LANDSLIDE ALARM!

OPINION

8 SPECTRAL LINES

When an engineering mistake is made, why does the world look to scientists to fix it? *By Henry Petroski*

21 TECHNICALLY SPEAKING

An undead digital army of iPod zombies is lurching through the streets—and our language. By Paul McFedries

DEPARTMENTS

4 BACK STORY

A scientist simulating part of the brain of a rat hears that a rival is simulating the brain of a cat, and a fight ensues.

6 CONTRIBUTORS

16 HANDS ON

When devices go digital, the digirati go hacking. A new software tool kit makes it easy to reprogram your camera. *By David Schneider*

TOOLS & TOYS

18 Refresh rates? Pixel density? LED? LCD? 3-D? Televisions have become as complicated as computers. By Mark Anderson

19 And with LCD touch screens, automated stitch control, USB ports, and software updates, so have sewing machines. *By Esther Schindler*

60 THE DATA

If reducing fossil fuel imports and greenhouse-gas emissions are key policy goals, how are we doing? By William Sweet