PopSci's 5th Annual
BRILLIANT
10

B y "brilliant," we don't mean smart. Or at least not *just* smart. Brilliance is marked by insight, creativity and tenacity. It's the confidence to eschew established wisdom in order to develop your own. It's the foolishness needed to set out for the edge of understanding and sail right past it, ignoring the signs reading "Thar be monsters" (not to mention "Turn back lest ye never be awarded a decent research grant again").

That's why, when we started the six-month-long process of selecting our Brilliant 10 awardees, we asked hundreds of respected scientists, university department heads and journal editors to name not the most established or well-known scientists in their fields. We asked for the mavericks. The young guns. The individuals who are changing not just what we know but the limits of what we think it's *possible* to know. The eventual winners are young (average age: 34), and each is just beginning to be noticed in the world outside their respective fields. But among their peers, our winners' oft-radical ideas are generating a rare degree of respect and admiration. Among us, as well. And for that, they deserve to be part of our Brilliant 10.

PHOTOGRAPHS BY JOHN B. CARNETT

COMPUTER SCIENCE

PLAYER 1

PLAYER 2

TIRED
COMPUTER
GLOW
YAWN

BLUE
WORK
YAWN

THINK OF THE ESP GAME as a slideshow in which you provide the captions. Random images pop up from the Web, and you furiously type possible one-word descriptions. If one of your words matches one guessed by your partner, it becomes a label for that image. It's fast, addictive and competitive, like a good Web game should be.

DATABASE
LABELS

GOOGLE
IMAGES
LABELS

THE STRATEGY WORKS because people spend more man-hours every day playing games on the Web than it took to build the Empire State Building. "If 5,000 people were playing the game simultaneously, they could label all the images in Google's directory in a few months," Luis von Ahn says. Google is interested in the software, but as of press time it had made no formal commitment.

THE MATRIX BUILDER

LUIS VON AHN, 27

If something's too hard for computers, he tricks human processing units into solving the problem

MOST ARTIFICIAL-INTELLIGENCE researchers face the gargantuan task of making computers think like humans. Carnegie Mellon University professor Luis von Ahn works the other way around. He harnesses tens of thousands of people's reasoning skills for those rare yet important jobs that are too hard for computers. His strategy is to make the work seem like a game. Von Ahn's most popular application tackles one of the most difficult tasks in computer science: labeling every image on the Internet. Computers can't make fine distinctions in visual information, so in the ESP Game (*espgame.org*), randomly paired online participants compete to label photos from the Web. If it's successful, your next Google Images search might turn up exactly what you're looking for.—ELIZABETH SVOBODA

MAN
WALL
VON AHN

FACE
MIRROR
VON AHN

BORN IN GUATEMALA, von Ahn got his first computer at age eight and taught himself to program the same year. He pursued math-oriented computer science before realizing his true calling: using brain power to make computers smarter. When you come up against a problem that takes more nuance than a computer can muster, he says, "human intelligence comes in handy."