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GUJARAT STATISTICAL ASSOCIATION

CHOOSING STATISTICS AS CAREER



CRUNCHING LOADS OF COMPLICATED DATA

Statisticians use sophisticated mathematical models to hunt for meaningful patterns and insights in vast troves of data. The applications are as diverse as improving internet search and online advertising, culling gene sequencing information for cancer research and analysing sensor and location data to optimise handling of food shipments.

Rich load of web data, experts warn, has its perils. Its sheer volume can easily overwhelm statistical models. Statisticians also caution that strong correlations of data do not necessarily prove a cause-and-effect link. If the data explosion magnifies longstanding issues in statistics, it also opens up new frontiers.

At Harvard, Carrie Grimes majored in anthropology and archaeology and ventured to places like Honduras, where she studied Mayan settlement patterns by mapping where artifacts were found. But she was drawn to what she calls "all the computer and math stuff" that was part of the job.

"People think of field archaeology as Indiana Jones, but much of what you really do is data analysis," she said. Now Grimes does a different kind of digging. She works at Google, where she uses statistical analysis of mounds of data to come up with ways to improve its search engine.

Grimes is an Internet-age statistician, one of many who are changing the image of the profession as a place for dronish number nerds. They are finding themselves increasingly in demand - and even cool. "I keep saying that the sexy job in the next 10 years will be statisticians," said Hal Varian, chief economist at Google. "And I'm not kidding."

The rising stature of statisticians, who can earn \$1,25,000 at top companies in their first year after getting a doctorate, is a byproduct of the recent explosion of digital data. In field after field, computing and the web are creating new realms of data to explore - sensor signals, surveillance tapes, social network chatter, public records and more. And the digital data surge only promises to accelerate, rising fivefold by 2012, according to a projection by IDC, a research firm.

Yet data are merely the raw material of knowledge. "We're rapidly entering a world where everything can be monitored and measured," said Erik Brynjolfsson, an economist and director of the Massachusetts Institute of Technology's Centre for Digital Business. "But the big problem is going to be the ability of humans to use, analyse and make sense of the data."

The new breed of statisticians tackle that problem. They use powerful computers and sophisticated mathematical models to hunt for meaningful patterns and insights in vast troves of data. The applications are as diverse as improving Internet search and online advertising, culling gene sequencing information for cancer research and analysing sensor and location data to optimise the handling of food shipments.

Even the recently ended Netflix contest, which offered \$1 million to anyone who could significantly improve the company's movie recommendation system, was a battle waged with the weapons of modern statistics.

Though at the fore, statisticians are only a small part of an army of experts using modern statistical techniques for data analysis. Computing and numerical skills, experts said, matter far more than degrees. So the new data sleuths come from backgrounds like economics, computer science and mathematics.

In another sign of the growing interest in the field, 6,400 people are attending the statistics profession's annual conference in Washington this week, up from around 5,400 in recent years.

* N.Y.T.