G a r y   P a t t i l l o

→Fast Facts

→ Value of college majors

The difference in earnings potential between a bachelor's degree in one major versus another can be well over 300 percent. A new report analyzes 171 majors in 15 categories. The lifetime advantage ranges from $1.09 million for engineering majors to $241,000 for education majors. The median annual income for a petroleum engineer is $120,000, while the median income for those with a counseling/psychology degree is $29,000.

Anthony Carnevale, Jeff Strohl, and Michelle Melton, "What's It Worth? The Economic Value of College Majors," Georgetown University Center on Education and the Workforce, http://cew.georgetown.edu/whatsitworth (retrieved September 1, 2011).

→ Electrical efficiency of computing

The energy efficiency of computers doubles roughly every 18 months. This is concurrent with the more well known phenomenon of Moore's Law, which states that computer performance (processing speed, memory, etc.) doubles roughly every 18 months. The first general purpose computer, the ENIAC, performed a few hundred calculations per second, with a power consumption of about 150 computations per kilowatt-hour (kWh). Modern computers can perform more than 10 trillion calculations per second with an efficiency of about 10 quadrillion (1.E+16) computations per kWh.

Jonathan Koomey, Stephen Berard, Marla Sanchez, and Henry Wong, "Implications of Historical Trends in the Electrical Efficiency of Computing," *Annals of the History of Computing,* IEEE, vol.33, no.3, pp.46–54, March 2011, http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5440129&isnumber=5986492 (retrieved September 14, 2011).

→ Google tricks

View live arrival and departure information for U.S. flights on Google by searching the name of the airline and the flight number. For example, a search for *frontier 667* immediately displays departure, arrival, flight status, location, and gate information at the top of the results page. Track a story or subject through time (with varying degrees of accuracy) by using the timeline tool in the left column panel of your results page to zoom in on any period. Get results that include synonyms by placing the ~ sign immediately in front of your search term. A search for *North American speech ~forensics* returns results, including *debate*. Sort your results by reading level by clicking on Advanced Search and filtering the results into basic, intermediate, and advanced reading levels.

http://google.com (retrieved September 9, 2011).

→ Citation mapping

Carl T. Bergstrom, Jevin D. West, and Martin Rosvall are using bibliometric data to create information flow maps. Using data such as the Eigenfactor score, they create algorithms to produce stunning visual interpretations of complex journal citation networks. Their tool, called InfoMap, is an algorithm based on a mapping equation that the team uses to build the visualizations and maps of scholarly literature production. For example, by tracking how often journals in neurology, psychology, and molecular and cell biology cited one another, they identified a period in 2004–05 when the research merged into the field of neuroscience. They plan to make the tools freely available.

Jennifer Howard, "Maps of Citations Uncover New Fields of Scholarship," *The Chronicle of Higher Education,* September 11, 2001, http://chronicle.com/article/Maps-of-Citations-Uncover-New/128938 (retrieved September 14, 2011).

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