Andrew Gelman of Columbia University has described statistics as a non-essential part of data science. In 1996, the International Federation of Classification Societies became the first conference to specifically feature data science as a topic. Big data is a related marketing term. Data analysts typically use statistical methods to test these hypotheses and draw conclusions from the data. Data scientists often work with unstructured data such as text or images and use machine learning algorithms to build predictive models and make data-driven decisions. Data science and data analysis are both important disciplines in the field of data management and analysis, but they differ in several key ways. In 2012, technologists Thomas H. Many statisticians, including Nate Silver, have argued that data science is not a new field, but rather another name for statistics. Stanford professor David Donoho writes that data science is not distinguished from statistics by the size of datasets or use of computing and that many graduate programs misleadingly advertise their analytics and statistics training as the essence of a data-science program. In 2003, Columbia University launched The Journal of Data Science. Data scientists are responsible for breaking down big data into usable information and creating software and algorithms that help companies and organizations determine optimal operations. In 1998, Hayashi Chikio argued for data science as a new, interdisciplinary concept, with three aspects: data design, collection, and analysis. Andrew Gelman of Columbia University has described statistics as a non-essential part of data science. Turing Award winner Jim Gray imagined data science as a "fourth paradigm" of science (empirical, theoretical, computational, and now data-driven) and asserted that "everything about science is changing because of the impact of information technology" and the data deluge. In contrast, data science deals with quantitative and qualitative data (e.g., from images, text, sensors, transactions, customer information, etc.) and emphasizes prediction and action. Vasant Dhar writes that statistics emphasizes quantitative data and description. Data science also integrates domain knowledge from the underlying application domain (e.g., natural sciences, information technology, and medicine). They work at the intersection of mathematics, computer science, and domain expertise to solve complex problems and uncover hidden patterns in large datasets. Vasant Dhar writes that statistics emphasizes quantitative data and description. Others argue that data science is distinct from statistics because it focuses on problems and techniques unique to digital data. He describes data science as an applied field growing out of traditional statistics. Davenport and DJ Patil declared "Data Scientist: The Sexiest Job of the 21st Century", a catchphrase that was picked up even by major-city newspapers like the New York Times and the Boston Globe. In 1962, John Tukey described a field he called "data analysis", which resembles modern data science. However, the definition was still in flux. Many statisticians, including Nate Silver, have argued that data science is not a new field, but rather another name for statistics.