

Later, attendees at a 1992 statistics symposium at the University of Montpellier II acknowledged the emergence of a new discipline focused on data of various origins and forms, combining established concepts and principles of statistics and data analysis with computing. Statistician Nathan Yau, drawing on Ben Fry, also links data science to human–computer interaction: users should be able to intuitively control and explore data. In 2012, technologists Thomas H. He describes data science as an applied field growing out of traditional statistics. Despite these differences, data science and data analysis are closely related fields and often require similar skill sets. For instance, a data scientist might develop a recommendation system for an e-commerce platform by analyzing user behavior patterns and using machine learning algorithms to predict user preferences. 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. 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 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. Jeff Wu again suggested that statistics should be renamed data science. After the 1985 lecture at the Chinese Academy of Sciences in Beijing, in 1997 C. Both fields require a solid foundation in statistics, programming, and data visualization, as well as the ability to communicate findings effectively to both technical and non-technical audiences. Data science is an interdisciplinary field focused on extracting knowledge from typically large data sets and applying the knowledge and insights from that data to solve problems in a wide range of application domains. 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 1962, John Tukey described a field he called "data analysis", which resembles modern data science. The professional title of "data scientist" has been attributed to DJ Patil and Jeff Hammerbacher in 2008. For example, a data analyst might analyze sales data to identify trends in customer behavior and make recommendations for marketing strategies. It uses techniques and theories drawn from many fields within the context of mathematics, statistics, computer science, information science, and domain knowledge. Vasant Dhar writes that statistics emphasizes quantitative data and description. Data science is a "concept to unify statistics, data analysis, informatics, and their related methods" to "understand and analyze actual phenomena" with data. It uses techniques and theories drawn from many fields within the context of mathematics, statistics, computer science, information science, and domain knowledge. In 1962, John Tukey described a field he called "data analysis", which resembles modern data science. It uses techniques and theories drawn from many fields within the context of mathematics, statistics, computer science, information science, and domain knowledge. In 1998, Hayashi Chikio argued for data science as a new, interdisciplinary concept, with three aspects: data design, collection, and analysis.