

Data science is multifaceted and can be described as a science, a research paradigm, a research method, a discipline, a workflow, and a profession. F. Cleveland. Both fields play vital roles in leveraging the power of data to understand patterns, make informed decisions, and solve complex problems across various domains. There is still no consensus on the definition of data science, and it is considered by some to be a buzzword. The professional title of "data scientist" has been attributed to DJ Patil and Jeff Hammerbacher in 2008. 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. Data science is an interdisciplinary academic field that uses statistics, scientific computing, scientific methods, processes, algorithms and systems to extract or extrapolate knowledge and insights from noisy, structured, and unstructured data. A decade later, they reaffirmed it, stating that "the job is more in demand than ever with employers". Jeff Wu used the term "data science" for the first time as an alternative name for statistics. Data science is multifaceted and can be described as a science, a research paradigm, a research method, a discipline, a workflow, and a profession. Big data is a related marketing term. Data science, on the other hand, is a more complex and iterative process that involves working with larger, more complex datasets that often require advanced computational and statistical methods to analyze. While data analysis focuses on extracting insights from existing data, data science goes beyond that by incorporating the development and implementation of predictive models to make informed decisions. Others argue that data science is distinct from statistics because it focuses on problems and techniques unique to digital data. In 2003, Columbia University launched The Journal of Data Science. 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. 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 addition to statistical analysis, data science often involves tasks such as data preprocessing, feature engineering, and model selection. 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. It uses techniques and theories drawn from many fields within the context of mathematics, statistics, computer science, information science, and domain knowledge. 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. There is still no consensus on the definition of data science, and it is considered by some to be a buzzword.