

Cleveland. Data analysis typically involves working with smaller, structured datasets to answer specific questions or solve specific problems. They work at the intersection of mathematics, computer science, and domain expertise to solve complex problems and uncover hidden patterns in large datasets. Jeff Wu used the term "data science" for the first time as an alternative name for statistics. In 2012, technologists Thomas H. Data science also integrates domain knowledge from the underlying application domain (e.g., natural sciences, information technology, and medicine). He reasoned that a new name would help statistics shed inaccurate stereotypes, such as being synonymous with accounting or limited to describing data. Data scientists are often responsible for collecting and cleaning data, selecting appropriate analytical techniques, and deploying models in real-world scenarios. Jeff Wu again suggested that statistics should be renamed data science. Big data is a related marketing term. However, data science is different from computer science and information 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. A decade later, they reaffirmed it, stating that "the job is more in demand than ever with employers". While both fields involve working with data, data science is more of an interdisciplinary field that involves the application of statistical, computational, and machine learning methods to extract insights from data and make predictions, while data analysis is more focused on the examination and interpretation of data to identify patterns and trends. The field encompasses preparing data for analysis, formulating data science problems, analyzing data, developing data-driven solutions, and presenting findings to inform high-level decisions in a broad range of application domains. In 1962, John Tukey described a field he called "data analysis", which resembles modern data science. In 1998, Hayashi Chikio argued for data science as a new, interdisciplinary concept, with three aspects: data design, collection, and analysis. 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. Vasant Dhar writes that statistics emphasizes quantitative data and description. A data scientist is a professional who creates programming code and combines it with statistical knowledge to create insights from data. A decade later, they reaffirmed it, stating that "the job is more in demand than ever with employers". In 2003, Columbia University launched The Journal of Data Science. 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. F.