In summary, data analysis and data science are distinct yet interconnected disciplines within the broader field of data management and analysis. The modern conception of data science as an independent discipline is sometimes attributed to William S. 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. He describes data science as an applied field growing out of traditional statistics. F. Andrew Gelman of Columbia University has described statistics as a non-essential part of data science. A data scientist is a professional who creates programming code and combines it with statistical knowledge to create insights from data. In 2012, technologists Thomas H. 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. Data science is multifaceted and can be described as a science, a research paradigm, a research method, a discipline, a workflow, and a profession. 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. 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. They work at the intersection of mathematics, computer science, and domain expertise to solve complex problems and uncover hidden patterns in large datasets. Data analysts typically use statistical methods to test these hypotheses and draw conclusions from the data. Others argue that data science is distinct from statistics because it focuses on problems and techniques unique to digital data. In addition to statistical analysis, data science often involves tasks such as data preprocessing, feature engineering, and model selection. After the 1985 lecture at the Chinese Academy of Sciences in Beijing, in 1997 C. Despite these differences, data science and data analysis are closely related fields and often require similar skill sets. In 2012, technologists Thomas H. In summary, data analysis and data science are distinct yet interconnected disciplines within the broader field of data management and analysis. Data scientists are often responsible for collecting and cleaning data, selecting appropriate analytical techniques, and deploying models in real-world scenarios. In 1998, Hayashi Chikio argued for data science as a new, interdisciplinary concept, with three aspects: data design, collection, and analysis. In 2003, Columbia University launched The Journal of Data Science. Jeff Wu used the term "data science" for the first time as an alternative name for statistics.