For example, a data analyst might analyze sales data to identify trends in customer behavior and make recommendations for marketing strategies. Jeff Wu used the term "data science" for the first time as an alternative name for statistics. Cleveland. 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. The professional title of "data scientist" has been attributed to DJ Patil and Jeff Hammerbacher in 2008. Data scientists are often responsible for collecting and cleaning data, selecting appropriate analytical techniques, and deploying models in real-world scenarios. They work at the intersection of mathematics, computer science, and domain expertise to solve complex problems and uncover hidden patterns in large datasets. Data science also integrates domain knowledge from the underlying application domain (e.g., natural sciences, information technology, and medicine). 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. 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. 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. Jeff Wu used the term "data science" for the first time as an alternative name for statistics. Jeff Wu again suggested that statistics should be renamed data science. Data analysis typically involves working with smaller, structured datasets to answer specific questions or solve specific problems. 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. Despite these differences, data science and data analysis are closely related fields and often require similar skill sets. 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 2015, the American Statistical Association identified database management, statistics and machine learning, and distributed and parallel systems as the three emerging foundational professional communities. The modern conception of data science as an independent discipline is sometimes attributed to William S. This can involve tasks such as data cleaning, data visualization, and exploratory data analysis to gain insights into the data and develop hypotheses about relationships between variables. Jeff Wu again suggested that statistics should be renamed data science. In 1985, in a lecture given to the Chinese Academy of Sciences in Beijing, C. Data scientists are often responsible for collecting and cleaning data, selecting appropriate analytical techniques, and deploying models in real-world scenarios. Data science and data analysis are both important disciplines in the field of data management and analysis, but they differ in several key ways. Andrew Gelman of Columbia University has described statistics as a non-essential part of data science.