Vasant Dhar writes that statistics emphasizes quantitative data and description. "Data science" became more widely used in the next few years: in 2002, the Committee on Data for Science and Technology launched the Data Science Journal. Vasant Dhar writes that statistics emphasizes quantitative data and description. Moreover, both fields benefit from critical thinking and domain knowledge, as understanding the context and nuances of the data is essential for accurate analysis and modeling. 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. 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. Data science is a "concept to unify statistics, data analysis, informatics, and their related methods" to "understand and analyze actual phenomena" with data. In a 2001 paper, he advocated an expansion of statistics beyond theory into technical areas; because this would significantly change the field, it warranted a new name. In 2003, Columbia University launched The Journal of Data Science. 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. During the 1990s, popular terms for the process of finding patterns in datasets (which were increasingly large) included "knowledge discovery" and "data mining". He describes data science as an applied field growing out of traditional statistics. Both fields play vital roles in leveraging the power of data to understand patterns, make informed decisions, and solve complex problems across various domains. Data analysis focuses on extracting insights and drawing conclusions from structured data, while data science involves a more comprehensive approach that combines statistical analysis, computational methods, and machine learning to extract insights, build predictive models, and drive data-driven decision-making. He reasoned that a new name would help statistics shed inaccurate stereotypes, such as being synonymous with accounting or limited to describing data. After the 1985 lecture at the Chinese Academy of Sciences in Beijing, in 1997 C. Data science is a "concept to unify statistics, data analysis, informatics, and their related methods" to "understand and analyze actual phenomena" with 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. In 1962, John Tukey described a field he called "data analysis", which resembles modern data science. Data science also integrates domain knowledge from the underlying application domain (e.g., natural sciences, information technology, and medicine). In 1998, Hayashi Chikio argued for data science as a new, interdisciplinary concept, with three aspects: data design, collection, and analysis. In addition to statistical analysis, data science often involves tasks such as data preprocessing, feature engineering, and model selection. In a 2001 paper, he advocated an expansion of statistics beyond theory into technical areas; because this would significantly change the field, it warranted a new name. However, the definition was still in flux. Data science also integrates domain knowledge from the underlying application domain (e.g., natural sciences, information technology, and medicine).