

CS Specialization: Data Systems

In a world that requires near instant response times and increasingly faster access to ever larger volumes of business-critical data, data-intensive systems are of the essence. They are the computer systems, usually hosted in data centers, that make it possible to handle and analyze very large amounts of data. They are the foundation of most state-of-the-art applications, such as deep learning, big data analytics, self-driving cars, or algorithmic trading. The specialization in Data-Intensive Systems and Applications enables you to work on data-intensive systems as software developer, DevOps engineer, system administrator, or cloud architect. The specialization will give you practical experience with building, evaluating, and improving the performance of cloud-based and multicore data systems.

<https://dasya.itu.dk/for-students/>

This specialization enables you to

- Evaluate the performance characteristics of data science applications
- Design and implement software components in the context of production-grade open-source data-intensive systems
- Analyze state-of-the-art techniques for data management and processing on modern hardware

Career Prospects

Data science enables forecasts, possibly in real-time, at ever lower cost and better accuracy for the benefit of our society. Today, data scientists are able to collect more data, access that data faster, and apply more complex data analysis than ever. These advances are mainly due to the exponential evolution of hardware combined with the emergence of machine learning frameworks, boosting the productivity of data scientists. It is the responsibility of data engineers, software engineers, IoT experts and data scientists to design solutions that perform at scale yet remain sustainable.

Prerequisites

Students are expected to have introductory knowledges of systems programming, operating systems and database systems. Following the courses C & Operating System, Introductory Programming and Introduction to Databases satisfy these prerequisites.

In general, the specialisation requires a willingness to engage with the software and hardware infrastructure of data science.