

Computer Science Master specialization track

Information and Software Engineering (ISE)

becomes

Data Science and Smart Services (DS3)

Information systems become increasingly socially embedded. Socially embedded information systems offer the right services to each individual user at the right time and location. We call such services: smart services. *Smart services* are based on the ability of information systems to manage large volumes of data obtained from data sources such as social networks and sensors measuring real-time phenomena. Hence, modern information systems integrate many data sources and derive useful information for the smart service offering and delivery process. *Data science* provides many of the techniques and tools that are applied here. Data science is concerned with big data, real-time analytics, data modeling and smart information use, which have emerged as important drivers for scientific and economic progress.

This specialization track provides *basic courses* for understanding data science, smart services, and how these fields are related through modern information systems. And it provides *advanced courses* that address the challenges of this cross-disciplinary field:

- Process datasets that are too big to be handled by traditional tools in reasonable time.
- Process streaming data for real-time monitoring and tracking of events and identification of trends.
- Extract reliable conclusions and models from unreliable data, integrated from multiple sources of varying quality.
- Combine the above to enable smart services that bring added value to end-users.
- Understand and apply the results of trade-offs between functionality, cost and risk of data science powered smart services.



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