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.
- 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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