Big Data Technologies

Exchange programme | Enschede

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Big data often refers simply to the use of predictive analytics or certain other advanced methods to extract value from data, and seldom to a particular size of data set. Accuracy in big data may lead to more confident decision making, and better decisions can result in greater operational efficiency, cost reduction and reduced risk.

This specialization focuses on getting acquainted with architectures and programming paradigms to store and process Big Data.

**ECTS : 30**
Semester : Fall (Sept-Jan) and Spring (Feb-July)
Location : Enschede

**Course content**
The specialization focuses on the following competences:
- Understanding and using Big Data storage and computation platforms
- Developing programming skills for processing Big Data
- Understanding and using machine learning and data mining techniques for analyzing and visualizing data

The specialization Big Data Technologies consists of 3 courses to give a theoretical foundation and to get programming experience to process and store Big Data.

These days many companies collect all kinds of data from their customers; sensors generate a lot of data; many activities of users of a system are logged. All these data is collected to improve the business of a company; to recommend products to customers; to predict future behavior etc...

Data sets are so large or complex and data can be generated that fast, that traditional data processing applications are inadequate. Challenges include analysis, capturing, data curation, searching, sharing, storage, transfer, visualization, querying, updating and information privacy.

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The following subjects are planned:

- **Big Data Processing with Hadoop** - 5 ECTS with subjects like Hadoop, Map-Reduce, Spark, Flink, lambda and kappa-architectures. Also some attention is paid to NoSQL databases.

- **Machine Learning Basics** – 5 ECTS. – with focus on supervised learning (classification) strategies

- **Machine learning Advanced** – 5 ECTS with a focus on unsupervised learning (recommendation systems) and deep learning.

Several practical assignments have to be performed by the student to pass each course. Most practical assignments consist of solving problems with Java and/or Python.

‘This programme is meant for software developers that want to develop applications for dealing with Big Data. The programme deals with topics such as storage, computation, machine learning and data mining.’

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Get Ready for a Smart World

Technological innovations have an impact not only on your social life but on your future professional life, too.

At Saxion University of Applied Sciences, we teach you how these innovations impact your future professional field and how you can apply technology to perform your work even better, so no matter which programme you choose, you will be prepared for a world that is getting smarter.

Studying at Saxion also means growing as a person. Who are you as a person? Where do your talents lie and what do you want to excel at? We will help you develop a moral compass, build your self-confidence and broaden your horizon.

You will learn a lot by doing a work placement or by taking a minor in another programme here, elsewhere in the Netherlands or abroad. This way, you will learn to take responsibility and prepare yourself for a business endeavour or a challenging job. You are in control!

Enrolment requirements

This course is meant for third/fourth year Software Engineering bachelor students with:

- Extensive OOP-programming skills in preferably Java or a comparable language.
- Experience with working in project-groups
- Knowledge of Agile development, SCRUM and git/svn

Deadline to enroll when starting in the fall is 1st of May, if housing is required the deadline is the 15th of April. When starting in Spring, the deadlines are 1st of November and 15th of October respectively.

More information

For more information about the Big Data Technologies Exchange programme, please contact Margriet de Vos: M.J.F.devos@saxion.nl

Would you like to apply? Start your application procedure at saxion.edu/application-form.

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Besides these modules a group-project of 15 ECTS is done in cooperation with a company which has a Big Data problem to solve. Each project-group consists of 4-5 students. The project consists of three increments and has a total of 15 ECTS.

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