

Big Data & AI

Course guide 2024-2025

Semester	Spring (semester 2)
Inholland location	Haarlem
Inholland faculty	Engineering, Design and Computing
Language of instruction	English
Cycle	Bachelor level
Number of ECTS	30

Subjects

Subject title	ECTS	Course code
Project Big Data & AI: Design	5	1922PBDAIZ
Big Data & AI Fundamentals	2	1922BDAIFZ
Computer Vision 1	2	1922CVIS1Z
Data Mining & Statistics	3	1922DMSTAZ
Python & Tools	1	1922PYTHTZ
Research Big Data	2	1922RESBDZ
Project Big Data & AI: PoC	6	1922BDPOCZ
Parallel Distributed Processing	3	1922PARDPZ
Computer Vision 2	2	1922CVIS2Z
Natural Language Processing	2	1922NLNGPZ
Capita Selecta	1	1922CAPSLZ
Professional Presenting	1	1916GE011Z

Content subjects

The need for data scientists has grown exponentially over the past few years. While there are many Big Data or Data Science minors out there, this minor uniquely focuses on the interaction between the field of Data Science and Artificial Intelligence and uses a software-oriented approach to solving 'wicked (data) problems'.

The core of the minor consists of a group project for an external client, which provides you with the opportunity to work on real-life realistic problems.

Learning outcomes

The student is able to:

- Work on a data science driven research project
- Create and train a machine learning model/pattern
- Create an application to show the outcomes of the machine learning / deep learning models/patterns
- Design and develop a highly scalable parallel distributed processing cluster of nodes
- Cooperate with fellow students in software development activities
- Effectively communicate with external clients

Mode of delivery, planned activities and teaching methods

The core of the minor consists of a group project for an external client, which provides you the opportunity to work on real-life realistic problems.

- Workshops by experts
- Do research with your project group
- Lectures on theory combined with practical exercises

Prerequisites and co-requisites

Bachelor ICT 3rd year with experience in programming.

Recommended or required leading and/or other learning recourses/tools

Assessment methods and criteria

- Project assessment for Big Data & AI, consisting of a written report, a code review and a presentation of the created application
- Individual homework assignments for Data Mining and Statistics
- Final group presentation for Big Data & AI Fundamentals
- Individual homework assignments for Parallel Distributed Systems (Hadoop)
- Individual final exam assignments for Computer Vision 1
- Individual final assignment for Python & Tools
- Final group paper for Research
- Individual final assignment for Natural Language Processing
- Individual final assignment for Computer Vision 2
- Individual final assignment for Capita Selecta (Guest Lectures)
- Final group presentation for Professional Presenting

All assessments must be completed with a sufficient grade (55 or higher).

Lecturer(s)

Teachers of the Information Technology study program (Haarlem) and guest lecturers from the research group (lectorate) Data Driven Smart Society provide lectures. Workshops and training sessions are provided by specialists from the field of Big Data and Artificial Intelligence.

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