COURSE 5

ML OPS

Co-funded by the European Union

Study load: 6 credits
Total study load: 150 hours

EU-Partner(s): AP, HOWEST, UVI
TC-Partner(s): -

PREREQUISITES

- Data Science
- Machine Learning
- Deep Learning

STUDY MATERIALS

- Moodle course – digital course
- Presentations
- Elaborated examples and cases
- Self-study materials
- Video recordings
- Demos

TECHNICAL REQUIREMENTS / LAB EQUIPMENT

- Microsoft Office
- Spyder
- Jupyter Notebook
- Anaconda
- Linux

- Docker / Kubernetes
- Git / Github / Gitkraken
- PuTTY
- Azure

LEARNING OUTCOMES

- The student uses existing backend services technologies (input, coding, output, maintenance)
- The student integrates the backend tailored to the frontend
- The student can establish communication between application components and the data storage system
- The student chooses and implements a backend service solution that fits in an existing or new IT environment
- The student detects errors in the technical implementation based on testing methodologies.
- The student analyses, configures and realises version management of code

ACTIVITIES

- Activating lectures
- Labs
- Project

CONTENT

- Deep learning AI models publishing via a FastAPI
- Microservices architecture via Kubernetes and Docker
- Manage versioning with Git and Data Versioning Systems

- Fully automated scripts to prepare data, train deep learning AI models and put them online in a production application
    - Monitoring the AI models in production
- Automated tests (Unit testing / CI)
- Automated deployments (CD)

- Using MLOps tools like Kubeflow or MLflow to manage and organise deep learning projects and scaling them when necessary
- AutoML

- Using cloud systems to train AI models in an automated way

EVALUATION

First exam chance

FORM	%	REMARK
Exam	70.00	
Project	30.00	

Second exam chance (re-sit exam)

FORM	%	REMARK
Exam	70.00	
Project	30.00	