COURSE 6

REINFORCEMENT LEARNING

Co-funded by the European Union

Study load: 6 credits
Total studytime: 150 hours

EU-Partner(s): HOWEST, NUP
TC-Partner(s): MUN

PREREQUISITES

- Deep Learning
- Profound knowledge of Python programming

STUDY MATERIALS

- Moodle course – digital course
- Presentations
- Elaborate examples and cases
- Weblinks
- Video Recordings
- Demos

TECHNICAL REQUIREMENTS / LAB EQUIPMENT

- Python / Anaconda
- Spyder
- Jupyter Notebook
- Microsoft Visual Studio Code

LEARNING OUTCOMES

- The student knows different criteria for technology choice.
- The student uses different criteria for technology choice.
- The student will be able to estimate whether reinforcement learning is suitable for solving problems in specific contexts.
- The student will understand the fundamentals of reinforcement learning and optimization algorithms and will be able to program these algorithms from scratch.
- The student will be able to build agents that make sequential decisions in complex simulated stochastic environments.
- The student will have a theoretical knowledge about advanced Reinforcement learning models and applications.

CONTENT

- Introductie tot reinforcement learning
- Search based optimization
- Multi-Armed Bandits
- Temporal Difference Learning
- Deep Reinforcement Learning
- Policy Gradient Methods
- Actor-Critic methods
- Advances in reinforcement learning

EVALUATION

First exam chance

FORM	%	REMARK
Exam	60.00	
Continuous assessment	40.00	Various interim assignments

Second exam chance (re-sit exam)

FORM	%	REMARK
Exam	100.00	