Artificial Intelligence

Building AI-Based Information Systems with Python

Syllabus

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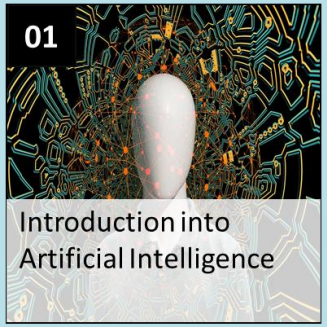
TECHNISCHE UNIVERSITÄT DARMSTADT

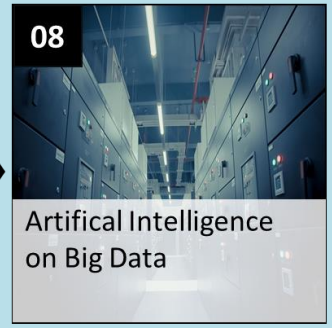
WIRTSCHAFTS INFORMATIK

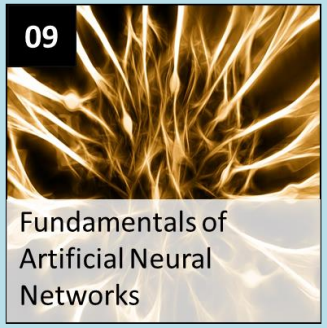
Syllabus

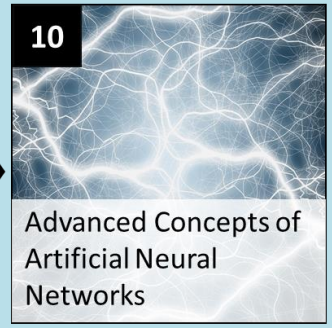


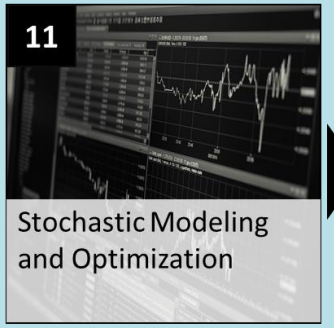
Exercise 1 + 2
Rapidminer and Python

Exercise 3
Modelling AI Problems









Exercise 4
Solving general AI Problems

Exercise 5 + 6
Modelling ANN

Capstone

Image sources: ↗ Pixabay (2019) / ↗ CC0

Outline and Organization

Course Organisation

traditional course	Lecture		Exercise
this course	Lecture	Capstone	Exercise

***Lecture**: Friday, 14:30-17:30/18:00, 18.10.2019-01.11.2019*
***Exercise**: Friday, 14:30-17:30, 08.11.2019-22.11.2019*

Capstone Project

Each participant is expected to join a team of max. 4 students to analyze and work on a capstone project

Organization:

- **Milestone 1**: Two Pager Submission
- Test-Presentation (voluntarily)
- **Milestone 2:** Final Paper Submission
- **Milestone 3**: Final Presentation
- Location: Consulting hours on demand

Team

General Questions: ki@is.tu-darmstadt.de

Dr. Dominik Jung
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Timo Sturm, M.Sc.
sturm@is.tu-darmstadt.de

Exam

- Exam repetitorium: tba
- Bonus: tba

Capstone

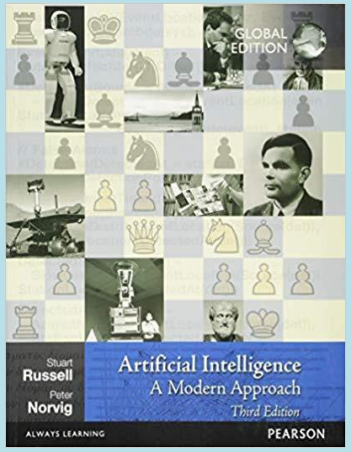
Semester 1

- **Projektinhalt**: Erarbeitung einer KI Lösung auf Grundlage des Stoffes von KI 1
- **Bericht**:
  - Erarbeitung einer breiten theoretischen Grundlage über Literaturrecherche (ähnlich wie in einer Seminararbeit)
  - Erläuterung & Diskussion über Einsatzmöglichkeit der implementierten KI Lösung
- **Bonuspunkte**: Es können keine Bonuspunkte für die Klausur gesammelt werden

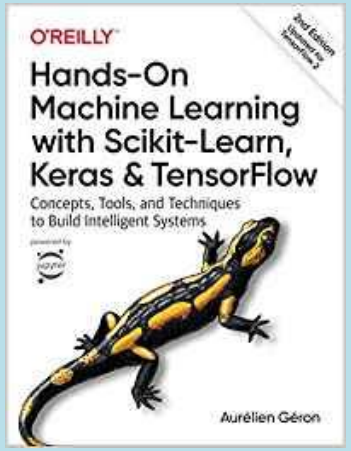
Semester 2

- **Projektinhalt:** Erarbeitung einer KI Lösung auf Grundlage des gesamten Moduls
- **Bericht:**
  - Erläuterung & Diskussion über Einsatzmöglichkeit der implementierten KI Lösung
- **Bonuspunkte:** Es kann ein kleines Projekt während KI 1 bearbeitet werden mit welchem Bonuspunkte für die Klausur gesammelt werden können

Recommended literature



Rusell, S., & Norvig, P. (2016). Artificial Intelligence: A Modern Approach Global Edition.



Géron, A. (2017). *Hands-on machine learning with Scikit-Learn and TensorFlow: concepts, tools, and techniques to build intelligent systems.*

Grading

Contact	Description	Distribution
Exam *Dr. Dominik Jung*	There will be a 60 minutes closed-book/closed-notes exam consisting of short-answer, and analytical questions covering all course material! One third will be general questions, one third related to tools, and the last third will be an overarching case.	60 %
Capstone Project *Timo Sturm*	Each participant is expected to join a team of max. 4 students to analyze and work on a capstone project. Results should be delivered in a document. Further information will be presented at the capstone introduction.	40 %

- Both elements need to be passed (grade 4.0 or better): Failing (i.e., grade 5.0) the (1) Exam, or the (2) Case Study, or (3) the Exam and the Case Study, results in failing the entire course.
- There is no retake possibility for the Capstone project. Thus, if you fail the Capstone project, you need to retake the course next year!

E-Learning and Course Material

Course material

- Lecture slides and exercise papers
- All downloads available in Moodle
- Lecture slides will be made available for download - there will be *no printed reader!*
- Teaching material accompanying the exercise will be available for download and should be brought to the exercise classes
- There will be *no printed exercise papers available in the exercise*

Download course material

- Only GIT will be used for additional support
- Material for the lectures (slides, additional documents)
- Exercise papers
- Updates

GIT Course Project:

https://github.com/Fiddleman/AIBasedInformationSystems

Course material