Lukas Schäfer

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lukaschaefer.de/profile

EDUCATION

UNIVERSITY OF EDINBURGH
MSc Informatics
Present | Edinburgh, UK
Expected Graduation Aug 2019
Specialisation in **Machine Learning** and **Reinforcement Learning**
DAAD graduate scholarship

SAARLAND UNIVERSITY
BSc Computer Science
Aug 2018 | Saarbrücken, Germany
Grade 1.2 (German scale) - UK 1st
Dissertation: Domain-Dependent Policy Learning using Neural Networks in Classical Planning

WARNDTGYMNASIUM
Abitur | 1.0
Jul 2015 | Geislautern, Germany

COURSEWORK

GRADUATE
Reinforcement Learning
Algorithmic Game Theory and its Applications
Machine Learning and Pattern Recognition
Probabilistic Modelling and Reasoning
Robotics: Science and Systems
Decision Making in Robots and Autonomous Agents

UNDERGRADUATE
Automated Planning
Admissible Search Enhancements
Neural Networks: Implementation and Application
Information Retrieval and Data Mining
Software Engineering

SKILLS

PROGRAMMING
Competent
Python • C++ • C • Java • SML
Familiar
Rust • HTML • CSS • Matlab • Bash

TECHNOLOGIES AND TOOLS
TensorFlow • Keras • NumPy • UNIX • Git • Vim • LaTeX

RESEARCH

BSC DISSERTATION | Foundations of Artificial Intelligence Group
Apr – Jul 2018 | Saarland University
- Transferred domain-dependent policy learning neural network architecture of Action-Schema Networks to classical automated planning
- Implemented the network using Keras, slightly adjusted its training for classical planning and extended the FastDownward planning framework
- Extensive evaluation and analysis was conducted on IPC domains of varying complexity identifying limitations in generalisation and scalability

WORK EXPERIENCE

PROGRAMMING 1 TEACHING ASSISTANT | Dependable Systems and Software Group
Oct 2016 - Mar 2017 | Saarland University
- Held weekly tutorials and office hours teaching fundamental concepts of functional programming, complexity theory and correctness proofs
- Marked weekly tests as well as mid- and endterm exams
- Collectively created learning materials and discussed student progress as part of the whole teaching team

VOLUNTEERING

NAVIGATION TEAM MEMBER | University of Edinburgh Hyperloop Team
Sep 2018 – Present | Edinburgh, UK
- Working on navigation of Poddy III Hyperloop prototype including sensor filtering and processing to estimate location, orientation and speed
- Preliminary Design Briefing of Poddy III was approved by SpaceX for their 2019 Hyperloop competition

LECTURER AND COACH | Mathematics Preparation Course
Sep – Oct 2017 | Saarland University
- Assisted organisation of preparation course introducing upcoming computer science students to student life and mathematical concepts
- Explained importance of mathematics for CS, formal languages and predicate logic to $\sim$ 250 participants in daily lectures of the first week
- Supervised two groups to provide feedback in daily coaching-sessions
- The course received **BESTE-award** for special student commitment 2017 of Saarland University

PROJECT EXPERIENCE

PLAGIARISM DETECTION TOOL | Software Engineering Project
Apr - Jul 2017 | Saarland University
- Researched, planned and built a reliable similarity detection for text & code with language-specific analysis for Python and C
- Designed and implemented a web-based output creation, highlighting similar submissions and plagiarism cases
- Our software is now successfully used in our customer's lectures to detect plagiarism cases on Python code

[References available on request]