

Lukas Schäfer

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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

Sep 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

Jun 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 ~ 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