# MATTHIAS HUMT

**M. Sc. Robotics**

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## EDUCATION

### Master of Science

**Technical University Munich**

Sep. 2016 – Aug. 2019  Munich, Germany

- Program: *"Robotics, Cognition, Intelligence"*, CS Department
- Thesis: *"Laplace Approximation for Uncertainty Estimation of Deep Neural Networks"*, German Aerospace Center (DLR)
- Erasmus: Vrije Universiteit Brussel, Belgium

### Bachelor of Engineering (Dual Studies)

**Niederrhein University of Applied Science**

2011 – 2015  Krefeld, Germany

- Mechanical and Design Engineering, Development
- Dual study program in cooperation with the Siemens AG

### Industrial Mechanic (Dual Studies)

**Siemens AG**

2011 – 2013  Krefeld, Germany

## EXPERIENCE

### Research Assistant

**German Aerospace Center (DLR)**

Oct. 2019 – Present  Munich, Germany

- Working on paper publication
- Research and implementation related tasks

### Factory Employee

**Mercedes-Benz Canada Inc. (Fuel Cell Division)**

Oct. 2015 – Dec. 2015  Vancouver, Canada

- Training: Automatic robotic line for fuel cell production

### Industrial Mechanic

**Siemens AG**

2011 – 2015  Krefeld, Germany

- Train construction training (Industrial Mechanic training)
- Internship: Quality/Safety unit, Air Conditioning Systems unit

### Volunteer Worker

**WWOOF Program**

Jan. 2016 – Mar. 2016  Tobermory, Canada

- Helping to build an energy-efficient house

### Peace Worker

**Civil Peace Service**

Oct. 2009  Durban, South Africa

- Construction work for people in need

## SKILLS

### Technical

**Python, Unix** ●●●●●
**PyTorch, TensorFlow, C/C++** ●●●●○
**MATLAB/Simulink, MCU, CAD** ●●●○○

### Languages

**English** ●●●●●

- TOEFL iBt: 106 (CERF: C1 or above)
- 6 months stay abroad in Canada
- English Graduate program

**French** ●●●○○

- CERF: B2

**German** ●●●●●

- Native language

## PROJECTS

**Deep Reinforcement Learning for Protein Folding prediction – Completed**

- Based on the *AlphaGo* architecture and implemented in Python with TensorFlow
- Complete rewrite of *Monte Carlo Tree Search* in C++ for speed improvement

**Safety verification tool for path planning in Autonomous Driving – Completed**

- Based on CommonRoad developed by TUM

**Software Engineering**

- Theoretical understanding of software design, algorithms and architectures
- The *Data Structures and Algorithms* course by UC San Diego on *coursera*.

**AI Safety**

- Reviewing most important publications in the domain (based on humancompatible.ai bibliography)

**(Deep) Reinforcement Learning**

- Studying high impact publications
- Reimplementing major architectures
- Testing on benchmark problems and environments (i.e. OpenAI Gym)

## INTERESTS