

Valentin Hartmann

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Education

Max-Planck-Institute for Intelligent Systems/IntCDC Stuttgart

Doctoral Student/Research Associate - Advisor Prof. Marc Toussaint

Stuttgart (DE)

10/19 – ongoing

ETH Zürich

Mechanical Engineering MSc - GPA 5.72/6

Zürich (CH)

09/16 – 02/19

- Focus on Robotics, Systems and Control - Coursework includes: Mathematical Optimization, System Identification, Probabilistic Artificial Intelligence, Autonomous Mobile Robots, Game Theory and Control, Stochastic Systems, Advanced Topics in Control
- Semester Thesis: *Implementation of a High Performance Integration Scheme for Numerical Optimal Control Applications* - Developed and benchmarked an algorithm for numerical integration in C++. Contributed it to Boost Odeint - Grade: 5.75/6

ETH Zürich

Mechanical Engineering BSc - GPA 4.88/6

Zürich (CH)

09/13 – 08/16

- Focus on Mechatronics - Coursework included: Machine Learning, System Modeling, Signals and Systems, Statistics
- Bachelor's Thesis: *Inductance Based Stiffness Sensing Catheter* - Simulation, design, iteration, fabrication, and prototyping. Additionally developed libraries in C/C++ for communication with sensors that were used in my and other theses - Grade: 6/6

IT Skills

Languages: Proficient in C++, C, Matlab, Python, working knowledge of Bash, Mathematica, SQL

IT: Proficient in Tableau, Windows, Unix, OS X, Git, good knowledge of Yalmip, MOSEK

Work Experience

BCG Gamma

Visiting Data Scientist

Munich (DE)

04/19 – 08/19

Verity Studios

Trajectory Generation Intern - Software Development

Zürich (CH)

03/18 – 08/18

- Developed collision free transition algorithms for a large number of drones as a part of the choreography generation tools
- Choreographed drone swarms of various sizes for internal customer demos and public-facing events (e.g. Drake, Starlight-Express)

Amazon Robotics

Robotics Intern – International Launch Performance

Berlin (DE)

09/17 – 02/18

- Generated a daily email report with insightful visualizations that is currently used to identify problematic areas of the robotic field and deployed it to all warehouses in Europe which lead to an up to 30% reduction of robot breakdowns
- Analyzed and visualized complex data sets pertaining to mobile robot performance and field errors for remediation of high-severity incidents
- Developed hardware and software solutions for human performance estimation and prediction

ETH Zürich

Teaching Assistant

Zürich (CH)

09/14 – 12/16

- Held TA positions in Kinematics and Statics, Mechanics of Materials, Dynamics, and Biomechanics I
- Prepared and held exercise sessions for up to 90 undergraduate mechanical engineering students per lesson
- Created the midterm exams in a team of two for the Kinematics and Statics course with over 800 enrolled students

Research Experience

ETH Zürich - Computational Science and Engineering Laboratory

Research Assistant

Zürich (CH)

02/17 – 08/17

- Analyzed and predicted chaotic processes by examination of learned representations with recurrent neural networks

ETH Zürich - Institute for Rapid Product Development

Research Assistant

Zürich/St.Gallen (CH)

02/14 – 08/14

- Developed and prepared a method for the density measurement of a single layer of powder in a 3D-Printing process

Projects

Receipt Scanning for Refrigerator Management

Hackzurich 2016

Zürich (CH)

09/16

- Task of the team: Developed a mobile app to keep track of stored food in households from scratch over a period of 40 hours
- My task: Implemented the preprocessing of camera images for improved character recognition performance with Python, using Tesseract and Google Cloud Computing

Simulation of the Boarding Process in an Airplane

Zürich (CH)

02/15 – ongoing

- Analyzed turn-around times for various airlines and airplane types
- Implemented, simulated, and compared various boarding strategies with C++, visualized the processes with Processing

Languages

German: Native speaker

English: Fluent (CEFR Level C2)

French: Intermediate knowledge

Activities

I enjoy doing sports such as diving (certified as a rescue diver), snowboarding, surfing, and endurance sports (rowing, long distance running). I play the drums and often cook menus in a large group of friends.