

Ingmar Schubert

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RESEARCH & EDUCATION

TECHNISCHE UNIVERSITÄT BERLIN | PHD CANDIDATE

March 2020 - Present | Learning & Intelligent Systems Lab (Marc Toussaint).

- Overarching topic: Combining learning and planning in robotics.
- Current research focus: Systematic investigation of algorithms combining model-based planning and reinforcement learning. Work in close exchange with Nicolas Heess (DeepMind).

UNIVERSITÄT STUTTGART | RESEARCH INTERNSHIP

Oct 2019 - March 2020 | Machine Learning & Robotics Lab (Marc Toussaint).

- Research on lazy action value models for Q-learning in robotics.

HUMBOLDT-UNIVERSITÄT ZU BERLIN | MSc PHYSICS (GPA 3.9/4.0)

October 2016 - June 2019

- Emphasis on quantum computing, quantum optics, and computational physics.
- Thesis: Development and numerical simulation of quantum-theoretical model for simultaneous double ionization of C60. Top grade 1.0^a (GPA 4.0/4.0).
- Graduation with final grade 1.1^a (GPA 3.9/4.0).

UNIVERSITY OF OTTAWA | VISITING STUDENT RESEARCHER

September 2017 - March 2018 | Thomas Brabec

- Numerical many-particle simulations of classical light-matter interaction.
- Development of a quantum-mechanical model of correlation effects during simultaneous multi-electron ionization.

HUMBOLDT-UNIVERSITÄT ZU BERLIN

BSc PHYSICS WITH MINOR IN MATHEMATICS (GPA 3.9/4.0)

October 2013 - January 2017

- Courses include quantum mechanics, special relativity, astrophysics, solid state physics, optics, linear algebra, analysis, computational physics, etc.
- Thesis: Theoretical development of a method for calculating quantum adiabaticity times of helium. My method exploits complex scaling for efficient numerical solution of the Schrödinger equation. Top grade 1.0^a (GPA 4.0/4.0).
- Year's best graduation. Final grade 1.1^a (GPA 3.9/4.0).

WORK EXPERIENCE

G-RESEARCH | QUANTITATIVE RESEARCH INTERN

June 2022 – September 2022 | London

- Europe's largest quantitative hedge fund.

IDALAB GMBH | JUNIOR DATA SCIENTIST

June 2018 – September 2019 | Berlin

- Strategy consulting firm specialized in statistics and machine learning. Clients ranging from local government agencies to DAX-listed global leaders.
- I was responsible for the application of machine learning methods (prediction engines, natural language processing) and optimization methods.

SENDER GMBH | FREELANCING DATA SCIENTIST

December 2017 – February 2018 | Berlin

- Design, development and integration of a deep learning model for price prediction of transportation services.

PUBLICATIONS

D. Driess*, I. Schubert*, P. Florence, Y. Li, and M. Toussaint: *Reinforcement Learning with Neural Radiance Fields*. arXiv (2022)

I. Schubert, D. Driess, O. Oguz, and M. Toussaint: *Learning to Execute: Efficient Learning of Universal Plan-Conditioned Policies in Robotics*. NeurIPS (2021)

I. Schubert, O. Oguz, and M. Toussaint: *Plan-Based Relaxed Reward Shaping for Goal-Directed Tasks*. ICLR (2021)

I. Schubert, G. Bart, and T. Brabec: *Simultaneous double ionization of C60 molecules in single-cycle pulses*. New J. Phys. 23, 023006 (2021)

I. Schubert and M. Toussaint: *Lazy Action Value Models for Q-Learning in Robotics*. MLPC Workshop at ICRA (2020)

G. Bart, I. Schubert, A. M. Parks, P. B. Corkum, and T. Brabec: *Coulomb Blocking of Sequential Tunnel Ionization in Complex Systems*. J. Phys. Photonics 2, 034007 (2020)

HONORS & ACTIVITIES

STUDIENSTIFTUNG

April 2014 - March 2020

Full scholarship from Germany's most prestigious scholarship foundation. Organization of seminar *Big Data and Society* at UC Berkeley, 2018.

LISE-MEITNER-AWARD

July 2017

As best bachelor graduate of 2016/2017 in Physics at Humboldt University.

ALGORITHMIC TRADING

July 2020

First place at 2020 G-Research Quantitative Finance Algorithmic Challenge Germany.

VOLUNTARY YOUTH WORK

July 2012 - Present

Within the German Alpine Association.

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

In descending order: Python, C++, Matlab, C, Fortran.

LANGUAGES

English Fluent (CEFR C2). French Basic (A2). Spanish Basic (A2). German Native.

^a German grading scheme from "Very Good" (1.0) to "Fail" (5.0).