

Ingmar Schubert

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RESEARCH & EDUCATION

TECHNISCHE UNIVERSITÄT BERLIN | PHD STUDENT

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

- Overarching topic: Sample-efficient reinforcement learning in robotics.
- Current research focus: Plan-based reward shaping for reinforcement learning.

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

GOOGLE DEEPMIND | COLLABORATING RESEARCHER

June 2021 - Present | London

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.
- Independent work in small teams of two to three people, direct client interaction.
- I was responsible for the application of machine learning methods (prediction engines, natural language processing) and optimization methods.

SENNDER 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

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.

MUSIC COMPETITION

March 2009

2nd place (ensemble piano and cello) at state level competition of "Jugend Musiziert", Germany's most renowned youth competition for classical music.

TECHNICAL SKILLS

PROGRAMMING LANGUAGES

Working knowledge in Python, C++, Matlab. Basic knowledge in 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).