Florian **Berlinger, PhD**

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Professional Experience

Fidelity Investments, AI Center of Excellence March 2022 – present, **Boston, USA**

- Spearheaded personalization powered by recommender systems in the Fidelity Bloom app to increase customer engagement.
- Led a team of five and coordinated with business stakeholders to build and deploy an information retrieval system powered by multiple customized NLP models. This system contributes to reducing production incident resolution time from 24 h to 5 min.

Harvard University, Self-Organizing Systems Research Group, Postdoctoral Fellow Jun 2021 – March 2022, **Cambridge, USA**

- Led the development of bio-inspired algorithms for the first significant demonstration of unsupervised and autonomous 3D collective coordination underwater. Designed a custom physically validated 3D simulator.

RESE Inc., Real Estate Investments — Now for Everyone, Co-Founder Jan 2021 – July 2022, **Boston, USA**

- Participated in the venture program of the Harvard Innovation Labs. Launched a waitlist campaign and attracted >300 sign-ups (https://www.rese.us), and secured a partnership with Crimson Rock Capital.

Bühler Group, Innovation Lab at R&D Food Processing, Intern Sep 2013 – Feb 2014, **Bangalore, IND**

- Managed a $30k budget for industrial research on food processing machines. Visited customers in Northern India to validate prototypes for automated processing of pulses. Was honored with a best innovator award.

Education

Harvard University, PhD and MS in Computer Science Aug 2016 – May 2021, **Cambridge, USA**

- **Thesis**: Blueswarm — 3D Self-organization in a Fish-inspired Robot Swarm
- **Awards/honors**: 2x Best Paper Finalist (ICRA 2021 & 2018), Swiss Study Foundation Fellowship, Certificate of Distinction in Teaching (Harvard University Bok Center)
- **Publications**: 10 peer-reviewed journal and conference articles incl. a cover article in Science Robotics, 1 patent
- **Relevant coursework**: Machine Learning, Deep Learning, Computer Vision, Data Structures and Algorithms, Probabilistic Analysis and Algorithms, System Modeling, Control Systems, Distributed Systems, Multi-Agent Systems, Autonomous Mobile Robots

ETH Zurich, MS and BS in Mechanical Engineering Sep 2010 – May 2016, **Zurich, CHE**

Additional Research Experience

Harvard University, Graduate Researcher Aug 2016 – May 2021, **Cambridge, USA**

- Spearheaded the development of a hardware and software platform for research in underwater multi-robot systems. The platform enables hardware-in-the-loop development of novel algorithms in a laboratory setting and facilitates knowledge transfer onto real-world systems. Miniature, low-cost, and low-maintenance units, coupled with scalable operational procedures, allow for experiments with an order-of-magnitude more robots than was previously possible.
- Initiated and led several cross-disciplinary collaborations:
  - Applied custom-made dielectric elastomer actuators (DEAs) in soft robotics; demonstrated the first autonomous DEA-driven underwater robot and a bending beam DEA for multi-modal locomotion.
  - Designed a biomimetic fish-like underwater robot suitable as an experimental platform for addressing open questions in aquatic locomotion. Used the robot to validate a thrust enhancement hypothesis for energy savings in fish schooling and developed a novel schooling-inspired propulsor for energy efficient underwater vehicles.
- Mentored 8 graduate and undergraduate students, lectured in 2 AI/robotics classes (CS189 and CS289).
- Played an instrumental role in obtaining and managing $567k (ONR) and $225k (Amazon AWS) in external funding.

ETH Zurich, Undergraduate Researcher Sep 2012 – May 2015, **Zurich, CHE**

- Designed Ship Inspection Robot (patented!), an inspection tool for the maritime transport sector that reduces maintenance time in dry docks, valued at up to $100k per day saved. Led a team of 10 interdisciplinary students, oversaw a $20k budget, negotiated with manufacturers and suppliers, reported to investors and experts.
- Designed a 2 mm diameter ablation catheter that features a flexible PCB and a Hall sensor to measure contact forces at its distal end. Demonstrated force-based tissue sampling for diagnostic purposes.

Skills & Service

Programming: Python (proficient), PyTorch, sklearn, pandas, SQL, MATLAB, C/C++, HTML/CSS, Git, LaTeX

Languages: English (proficient), German (mother tongue), French (conversational), Spanish (basic)

Organizations: ETH Alumni New England Chapter, board member (2016-2021); Wiler Forum for Sustainability Issues, vice president (2010-2016); reatch.ch, member of the artificial intelligence team (2017-2018)