

SUMMARY

- Published scientist and perpetual student eager to apply 10+ years of mathematical training to solve real world challenges.
- Interested in exploring practical applications of network analysis and deep learning.
- Visual thinker and animated presenter experienced in illuminating abstract or technical concepts to small and large diverse audiences.
- Community organizer dedicated to educational growth and multicultural inclusion.

EDUCATION

Technische Universität Berlin [↗](#), *PhD in Mathematics — Computational Topology* [↗](#) 2015
Hunter College of the City University of New York [↗](#), *BA/MA in Mathematics* 2008

EXPERIENCE

University of California, Davis [↗](#), *Arthur J. Krener Assistant Professor* 2015–2017

- Developed learning software in R to identify motion in video data.
- Applied supervised clustering to analyze genomic data and reclassify breast cancer subtypes.
- Designed graduate-level special topics course “Topology of Data” [↗](#). Advised 5 group projects.

Technische Universität Berlin [↗](#), *Scientific Assistant* 2012–2015

- Developed software in C++, Perl for open source topological software package *polymake* [↗](#).
- Produced complicated test examples [↗](#) to identify limitations to heuristic algorithms.
- Improved software; speed up by 100x. Benchmarked our heuristics [↗](#) against leading software.
- Implemented [↗](#) a Markov chain Monte Carlo method to improve simulated annealing strategy.
- Contributor in Discrete Mathematics/Geometry [↗](#) and Geometry and Mathematical Physics [↗](#) research groups.
- Published, presented at international scientific and technology conferences, seminars.

Wolfram Research [↗](#), *Kernel Development Intern* 2007

- Built Mathematica port to distributed graphics system [↗](#) that supports cluster-based 3D immersive virtual environments [↗](#).
- Developed software in C, Mathematica of a virtual reality roller-coaster to ride arbitrary knots. Product featured at Wolfram Tech Conferences.

University of Illinois at Urbana-Champaign [↗](#), *CUBE Research Assistant* 2006

- Developed software [↗](#) in C, Python, Mathematica to animate [↗](#) surface deformations in OpenGL applications [↗](#) and beta-test Mathematica v6.0’s improved geometric functionality.
- NSF funded Research Experience for Undergraduates (REU) program: *illiMath2006* [↗](#).

INTERESTS

- Founder & President of 501(c)3 nonprofit organization HAA [↗](#) 2003–2008
- Lead Organizer of weekly interdisciplinary graduate seminar [↗](#) 2009–2015
- Graduate Student Representative of Berlin Mathematical School [↗](#) 2009–2012

SKILLS

- C/C++, Perl, Python, R, HTML
- Mac OSX, Linux (Ubuntu, openSUSE)
- Mathematica, \LaTeX (TikZ, beamer), GIMP, ffmpeg
- English-US (Native), Japanese (Native) — USA-Japan dual citizen