Arman Tavakoli

Education

Ph.D. in Applied Mathematics, Michigan State University, USA — Dec 2021
Dissertation Topic: Dimension Reduction for Manifold Models. Thesis available here.

M.Sc. in Applied Mathematics, Waterloo University, Canada — June 2014

B.Sc. in Mathematics and Physics (Honours), University of British Columbia, Canada — Apr 2012

Programming: Python, Java, MATLAB

Work Experience

Research Assistant, **Michigan State University**, USA — Sept 2016 - Dec 2021

- Instructor for 300+ students in math courses. Teaching material available here.
- Research in dimension reduction of data with provable guarantees

Software Engineer, **MDA**, Canada — Dec 2014 - July 2015

- Safety testing of planning software for aircraft landing routes
- Liaison with product managers and system engineers for clarifying and testing of the legal safety requirements

Research Assistant, **Waterloo University**, Canada — Sept 2012 - June 2014

- Numerical simulations with MATLAB
- Research in control theory lab. Demonstration available here.

Research Assistant, Swindale Lab, **University of British Columbia**, Canada — Nov 2011 - April 2012

- Data analysis with Python
- Research in computational neuroscience

Intern in Software Engineering, **IBM**, Canada — Sept 2010 - May 2011

- Tooling support for the Java Just-In-Time Compiler Development
- Speed-up, parallelization and automation of 1k+ daily tests

Publications and Pre-Prints

Math

Characterizing unit spheres in Euclidean spaces via reach and volume. arXiv:2202.06161. — 2022
Fast JL Embeddings of Compact Submanifolds with Boundary. arXiv: 2110.04193. — 2021
Lower Bounds on the Low-Distortion Embeddings of Submanifolds of $\mathbb{R}^N$. arXiv: 2105.13512. — 2021

Engineering

Wireless sensor in a contact lens for self-monitoring of intraocular pressure. PMID: 31825423. — 2020

Service and Outreach

Math Representative on the Council of Graduate Students, Michigan State University — 2020-2021
Education Outreach For Elementary Schools, Michigan State University — 2019-2020