Daniel Mishler

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A Brief Note To the Reader

To whomever reads my CV,

I'm a fifth year PhD student at the University of Tennessee beginning to put together a dissertation surrounding on "Novel Computing Strategies to Support the Life Sciences." It features linear algebra, computer networks, and some graph algorithms. I am hoping to graduate in August of 2026 and pursue a career in higher education.

Education

University of Tennessee — Knoxville, Tennessee
GPA: 4.00/4.00 — 2021-present

- M.S. in Computer Science
- Ph.D. in Computer Engineering (in progress)

Indiana University, Bloomington — Bloomington, Indiana
GPA: 4.00/4.00 — 2017-2021

- B.S. in Intelligent Systems Engineering
- B.S. in Physics

Research Experience

Dr. Langston's Life Sciences Lab — Knoxville TN
Graduate Research Assistant — Spring 2024 - Present

- Used graph algorithms and data science on biomedical data in conjunction with life sciences labs
- Informed health scientists of new algoirhtms and optimized existing workflows to discover treatments to common medical conditions and diseases

Peerless Technologies, LLC — Knoxville, TN
Software Engineering Intern — Summer 2024

- Note: Peerless Technologies, LLC acquired Statheros, LLC, where I formerly worked
- Wrote code to integrate reinforcement learning into training simulations for Air Force pilots
- Translated hardware signals into usable parameters for a high level model

Sandia National Laboratories — Albuquerque, NM
Graduate Research Intern - Scalable Algorithms (1465) — Summer 2023

- Investigated the performance of device-initiated communication
- designed and presented papers and presentations for conferences that impact the lab missions
- Exposed RMA/PGAS technology through Kokkos Remote Spaces

Innovative Computing Laboratory — Knoxville, TN
Graduate Research Assistant - Distributed Computing Group — Summer 2021-Fall 2023

- Designed software to harness full use of many-core machines.
- Investigated What motivates performance in task-based GEMM (matrix multiply)

Neutron Spin Rotation Bloomington, Indiana
Undergraduate in Dr. Mike Snow's Lab Spring 2020-Summer 2021

- Created instrument drivers in LabWindows for multiple instruments present in the apparatus
- Project seeks to verify (or potentially disprove) predictions of the standard model at low temperatures

PhysiCell Bloomington, Indiana
Undergraduate in Dr. Paul Macklin's "MathCancer" lab Spring 2018 - Spring 2020

- PhysiCell is an extendable Free and Open Source software specializing in cell simulation to gain insights into cancer treatments
- Frontend development for PhysiCell and implementation of user guides
- Created 'xml2Jupyter', a software that generalizes any xml framework to an easily understandable frontend (This is where my publication stems from)

OpenBCI Bloomington, Indiana
Brain Computer Interface, under Martin Swany, ISE dept. chair Fall 2017

- OpenBCI: implemented ways to control a remote control car using signals from the brain.
- Made heavy use of neural networks and 3D design to implement several sensors around the brain

Invited Talks

Slides can be found at web.eecs.utk.edu/~dmishler/presentations

- **What is Exposed Buffer Architecture?** at Taylor University of Upland, IN 2025

Publications

[1] **D. Mishler**, J. Ciesko, S. Olivier, and G. Bosilca, "Performance insights into device-initiated rma using kokkos remote spaces", in *2023 IEEE International Conference on Cluster Computing Workshops (CLUSTER Workshops)*, 2023, pp. 66–67.

[2] R. Heiland, **D. Mishler**, T. Zhang, E. Bower, and P. Macklin, "xml2jupyter", in *2019 Journal of Open Source Software*, Apr. 8, 2019, p. 01 408.

Teaching

- **Graduate Teaching Assistant** at The University of Tennessee, Knoxville Fall 2024
  Physics for Engineers (EF151)
- **Undergraduate Instructor** at Indiana University Spring 2019,2020,2021
  Software Systems Engineering (11688)
- **Mathematics Tutor** at Indiana University (Academic Support Center) Fall 2018 - Spring 2020
  Finite Mathematics, Calculus I-IV, Differential Equations
- **Undergraduate Instructor** at Indiana University Fall 2019
  Engineering Principles (10212)

Skills

- **Programming Advanced:** C, Python
- **Programming Intermediate:** C++, Verilog, LabWindows, ARM, x86, SQL, (Jupyter)
- **Design:** Fusion360, Adobe (Illustrator, Premiere, & Photoshop), Cura, Trotec
- **Concepts:** Schedulers, Visualization, Networks, Operating Systems, Windows, Linux, Optimization, Databases, Natural Language Processing, Machine Learning

Projects

PyEBA/EBA-IR — University of Tennessee
Research project with Dr. Micah Beck — Spring 2024-present

- An implementation of Dr. Beck's "Exposed Buffer Architecture" in Python (PyEBA) and another in C using an EBA Intermediate Representation (EBA-IR), intended to demonstrate capabilities of an alternative form of networking capable of doing things not possible in the internet and useful for several niche applications which are inhibited by IP and TCP.

DucreuOS — University of Tennessee
Operating Systems under Dr. Steven Marz — Spring 2022-present

- Recreation of UNIX-style OS complete with graphics, memory management, multithreading, and processes in RISC-V. Originated in a particularly difficult experimental section of an operating systems course. github link.

Pocket Scientist — Indiana University - Capstone
Engineering Senior Capstone Project — Fall 2020-Spring 2021

- User focused web application with Database parser that scans papers and databases for claims to improve the reliability of information in the field. SoulWare Website.

Scholarships and Awards

- Bodenheimer Fellow — 2022
- Cheng Wu Innovation Challenge - Finalist — 2018,2021
- IU Founders Scholar/Dean's List — 2018-2021
- Burnett-Masters scholar — 2019

Extracurricular Activities

- Physics Club: Officer — 2017–2021
  Club meets weekly for discussion on Physics, talks from faculty, and planning. Responsible for planning majority of IU's Physics outreach, especially to children in elementary and middle school.
- Dungeons and Dragons at IU: Founder — 2018–2021
  Largest active student organization at Indiana University. Club is an umbrella for people interested in playing Tabletop Roleplaying Games to find a community at IU.
- Music involvement — Fall 2008–Current
  Have dedicated approximately 10,000 hours to music. Instruments include Trumpet, Piano, electric bass, Guitar, Ukulele, and voice. Play music for nonprofits/fundraisers multiple times a year and lead local worship bands.

Non-research Employment

General Motors Austin, Texas

Software Development at IT Innovation Center Summer 2020

- Developed frontend/backend for data science models and internal company tools.
- Pioneered a new initiative to move data science at GM from a manual quarterly report to a consistent and automatically updated application.

NSWC Crane Crane, Indiana

Electrical Engineer - Radio Frequency Countermeasures Summer 2019

- Testing and Evaluation for Department of Defense Naval Systems.
- Heavy work with radio hardware and signal propagation.