

# Dominic Bair, M.S.

✉ dbair@tennessee.edu

🌐 www.dbair.xyz

🐙 <https://github.com/DothWalrus>

in <https://linkedin.com/in/dominic-bair-861ab0189/>

## Education

- 2022 – . . .    📖 **Ph.D. candidate, Mathematics**, University of Tennessee Knoxville (UTK).
- 2020 – 2022    📖 **M.S. Mathematics**, Montana State University (MSU).  
Thesis title: *DVM: A deep learning algorithm for minimizing functionals*.
- 2016 – 2020    📖 **B.S. Mathematics; Minor: Physics**, Montana State University.

## Publications

- 1    D. Bair, “DVM: A deep learning algorithm for minimizing functionals,” *Theses and Dissertations at Montana State University (MSU)*, 2022. 📄 URL:  
<https://scholarworks.montana.edu/xmlui/handle/1/16840>.
- 2    C. Potts, J. Schearer, T. A. Sebrell, *et al.*, “MNPmApp: An image analysis tool to quantify mononuclear phagocyte distribution in mucosal tissues,” *Cytometry Part A*, vol. 101, no. 12, pp. 1012–1026, 2022. 📄 DOI:  
<https://doi.org/10.1002/cyto.a.24657>. eprint:  
<https://onlinelibrary.wiley.com/doi/pdf/10.1002/cyto.a.24657>.

## Employment History

### Paid Positions

- 2022 – . . .    📖 **Graduate Teaching Assistant**, UTK Department of Mathematics.
- 2023 – 2024    📖 **Climbing Wall Attendant/Setter**, UTK RECSports.
- 2020 – 2022    📖 **Graduate Teaching Assistant**, MSU Department of Mathematical Sciences.
- 2015 – 2022    📖 **Laborer**, 3 Brothers Plumbing and Heating.
- 2020    📖 **Laborer**, Peak Property Management.
- 2019 – 2020    📖 **Undergraduate Research Assistant**, MSU Department of Mathematical Sciences.
- 2018 – 2019    📖 **Undergraduate Research Assistant**, MSU Department of Physics.

### Volunteer Positions

- 2018 – 2020    📖 **Assistant**, National Center for Unwanted Firearms.
- 2015 – 2017    📖 **Firefighter**, Clancy Volunteer Fire Department.

### Courses Taught

- M125    📖 **Basic Calculus**, UTK.
- M113    📖 **Mathematical Reasoning**, UTK.
- M115    📖 **Statistical Reasoning**, UTK.
- M119    📖 **College Algebra**, UTK.
- M171    📖 **Calculus I**, MSU.
- M151    📖 **Precalculus**, MSU.
- M161    📖 **Survey of Calculus**, MSU.
- M121    📖 **College Algebra**, MSU.

## Research Interests

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Percolation theory, geometric group theory, computational topology, stochastics, machine learning, applications.

## Skills

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Languages	📖 German (Beginner).
Coding/Software	📖 MATLAB, Python, $\LaTeX$ , Julia, Windows, Linux.
Misc.	📖 Technical problem solving, leadership, academic research, teaching, training, first aid.

## Miscellaneous Experience

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### Awards and Achievements

2025	📖 <b>UTK Oral Specialty Exam</b> , passed.
	📖 <b>UTK Preliminary Exam in Topology</b> , passed.
	📖 <b>UTK Preliminary Exam in Stochastics</b> , passed.
2020	📖 <b>NSF GRFP Reviews</b> , Excellent, Excellent, Very Good. (Fellowship not received).
	📖 <b>NSF and AWM Travel Grant</b> , to present at Data Science and Image Analysis Conference of the Pacific Northwest.
2019 – 2020	📖 <b>INBRE Grant</b> , to support the Spatial Statistics in Histology Images research. NIH funded, MSU based grant
2016 – 2020	📖 <b>MSU Premier Scholarship</b> , for demonstration of academic promise, leadership experience and other honors.
2019	📖 <b>Superior Achievement in the Field of Mathematics</b> , recognition by the National Honorary Mathematics Society, Pi Mu Epsilon, for superior achievement in the field of mathematics.
2016	📖 <b>Eagle Scout</b> , the highest achievement that can be obtained in the Scouts of America.

### Presentations

2021	📖 <b>Deep Variational Methods</b> , MSU Poster Slam.
	📖 <b>Deep Variational Methods</b> , Walk the Walk Chalk the Chalk.
2020	📖 <b>Spatial Statistics in Histology Images</b> , SIAM Northern States Section Student Chapters Conference.
	📖 <b>Spatial Statistics in Histology Images</b> , Data Science and Image Analysis Conference of the Pacific Northwest.
2019	📖 <b>Spatial Statistics in Histology Images</b> , MSU Winter Research Celebration.

### Reading Courses

2023	📖 <b>Monte Carlo Strategies in Scientific Computing (Liu)</b> , UTK.
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### Certifications

📖 <b>CPR and First Aid</b> , American Red Cross.
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