Hassan Abdallah

Curriculum Vitae
Department of Biostatistics
University of Michigan, Ann Arbor
hasabdal@umich.edu

Education

M.S. in Biostatistics, University of Michigan Ann Arbor, Expected May 2022

M.A. in Applied Mathematics, Wayne State University, May 2020

B.S. in Mathematics, Wayne State University, May 2017

Related Employment

Senior Systems Software Engineer *January 2018 to present*
Wayne State University, Computing & Information Technology

High Performance Computing Assistant *August 2016 - December 2017*
Wayne State University, Computing & Information Technology

Clinical Research Assistant *August 2015 - March 2016*
Michigan Spine & Brain Surgeons

Technical Skills

Computing Tools
Linux, OpenMP, MPI, PBS, Slurm.

Computer Languages
Extensive experience with R, C++, SQL, bash, Python, and LaTeX. Some experience with SAS and Java.

Papers/Preprints

1. **H. Abdallah**, A. Regalski, M. Kang, M. Berishaj, N. Nandi, A. Chowdury, R. Suryadevara, V. Diwadkar, A. Salch. *Statistical Inference for Persistent Homology applied to fMRI.* In Preparation.

2. H. Abdulah, B. Huber, S. Lal, **H. Abdallah**, H. Soltanian-Zadeh, D. Gatti. *Lung Segmentation in Chest X-rays with Res-CR-Net* (2020) Preprint. https://arxiv.org/abs/2011.08655

3. A. Salch, **H. Abdallah**, A. Regalski, R. Suryadevara, M. Catanzaro, V. Diwadkar. *Why Topological Data Analysis(TDA) should be used for functional discovery in fMRI data.* In Review.

4. **H. Abdallah**, A. Liyanaarachchi, M. Saigh, S. Silvers, S. Arslanturk, D. Taatjes, L. Larsson, B. Jena, D. Gatti. *Res-CR-Net, a residual network with a novel architecture optimized for the semantic segmentation of microscopy images.* (2020) Machine Learning: Science and Technology **1** 045004

Talks

- *Topological Data Analysis of Time Series Data: Methods and Applications*, Student Math & Applications Seminar, Wayne State University, Detroit, MI, September 2019
- *Introduction to Topological Data Analysis with R in HPC*, Topological Data Analysis course, Wayne State University, Detroit MI, March 2019
- *Identification of vascular substructures with Topological Data Analysis*, San Diego Supercomputing Summer Institute, San Diego, CA, August 2018
- *Fundamentals of High Performance Computing*, Wayne State University, Detroit MI, September 2018

Poster Presentations

- **H. Abdallah**, A. Regalski, M. Berishaj, A. Salch. *A Statistical Procedure for Identying Persistent Vines.* Algebraic Topology: Methods, Computation, & Science, Ohio State University, June 2020 (Postponed due to COVID-19).
- A. Regalski, **H. Abdallah**, M. Berishaj, M. Kang, A. Salch. *Dynamics of topologically-characterized structures within fMRI signal.* Organization for Human Brain Mapping Annual Meeting, Montreal, Canada, July 2020 (Withdrew due to COVID-19).
- **H. Abdallah**, A. Regalski, M. Berishaj, M. Kang, A. Salch. *Statistical inference from persistent homology of fMRI signals.* Organization for Human Brain Mapping Annual Meeting, Montreal, Canada, July 2020(Withdrew due to COVID-19).

Conferences

- Summer Conference on Topology and its Applications, University of Witwatersrand, July 2019.
- Graduate Student Topology and Geometry Conference,University of Illinois, Urbana Champaign March 2019.
- Supercomputing 18, Dallas TX, November 2018.
- San Diego Supercomputing Summer Institute: HPC and Data Science, University of California, San Diego, August 2018.
- Data Science: Tools and Methods Workshop, Chicago, IL, July 2018.
- Big Data and Business Analytics Symposium, Wayne State University, March 2018.
- Data Science for Social Good Conference, University of Chicago, September 2018.
- Michigan Institute for Data Science Annual Symposium, University of Michigan, Ann Arbor, September 2017.

Awards and Grants

- University of Michigan School of Public Health Tuition Scholarship (25%), Department of Biostatistics, University of Michigan, Ann Arbor, August 2020 - May 2021.
- Robert and Nancy Irvan Endowed Scholarship, In recognition of academic excellence in Master's program. Department of Mathematics, Wayne State University, April 2020.
- National Science Foundation Travel Grant, $2500. Funding to attend Summer Conference on Topology and its Applications. Johannesburg South Africa, July 2020.

- National Science Foundation Travel Grant, $400. Funding to attend Graduate Student Topology and Geometry Conference. Champaign IL, March 2019.