Dennis Farmer

Ann Arbor, Michigan
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Education

University of Michigan - Ann Arbor, MI **2022 -**
B.S.E. Data Science - College of Engineering
GPA: 3.87/4.00
Coursework: Probability, Data Structures and Algorithms, (Fall 2024) - ML, Web, Theoretical Stats

Washtenaw Community College - Ann Arbor, MI **2020 – 2022**
Coursework: Linear Algebra, Multivariable Calculus, Differential Equations, Statistics, Physics I

Projects

Real vs Fake Face Classification **September 2023 – December 2023**
Michigan Data Science Team *Ann Arbor, MI*

- Designed and trained a custom convolutional neural network architecture to differentiate photoshopped faces from unaltered faces with a team of five people.
- Developed a web application using React and Express for uploading images and receiving classification and GradCam results via API.
- Github Link
- Powerpoint Presentation from F23 MDST Expo

Teaching Experience

Education Developer **June 2024 – Present**
Michigan Data Science Team *Ann Arbor, MI*

- Working on improving the MDST educational experience for club members by designing tutorials, holding in-person office hours, and presenting workshops relating to data science topics
- Collaborating with a team of five other people to enhance the effectiveness of MDST's recruiting and onboarding process

Research Experience

Bioinformatics and Machine Learning **May 2024 – Present**
University of Michigan - Welch Laboratory *Ann Arbor, MI*

- Researching the design and deployment of deep generative models for single-cell genomics

Complex Systems **September 2022 – August 2023**
University of Michigan - Dr. Patrick Grim *Ann Arbor, MI*

- Studied and worked on the use of adaptive Bayesian networks as a model for the structure of scientific theories
- Developed a codebase in Python to facilitate research on Bayesian philosophy of science and causal discovery methods, with a team of four other people

Bioinformatics and Computer Vision **May 2022 – December 2022**
University of Michigan - Maerz Laboratory *Ann Arbor, MI*

- Implemented and improved on an automated image analysis pipeline using a U-Net convolutional neural network architecture in MATLAB for semantic segmentation of post-traumatic osteoarthritis histological images
- Analyzed single-cell RNA sequencing data using R to characterize immune cell phenotypes in PTOA immune response
- Poster: Summer 2022 UROP Research Symposium
- Paper: Synovial fibroblasts assume distinct functional identities and secrete R-spondin 2 in osteoarthritis

Skills

Languages/Tools: Python (PyTorch, Pandas, Django, pyAgrum), SQL (PostgreSQL, SQL Server), C++, R (Shiny, dplyr, Monocle3, CellChat, Seurat), Bash, LaTeX, Microsoft Excel (PivotTable, XLOOKUP, Power Query), Microsoft Azure, React, Express

Developer Tools: Make, Git, Linux, Vim