Pat Wall

he/him/his
godzillabutnicer.com
github.com/godzilla-but-nicer
(734) 635-4650 — patrick.gordon.wall@gmail.com

Education

May 2023 **M.S. Informatics** Indiana University

- Concentration: Complex Networks and Systems
- Relevant Courses: Network Science, Signal Processing and Information Theory, Nonparametric Statistics, SNP Discovery and Population Genetics
- Exited PhD program when advisor left institution

May 2019 **B.S. Biochemistry** Eastern Michigan University

- Minor: Mathematics

Academic Projects

Jan. 2022—Present **Dormancy in 2D discrete dynamical systems**
Advisor: Jay Lennon

- Implemented 2D cellular automaton models to run in parallel using Rust and characterized statistical differences in outcomes for different models.
- Produced observations consistent with current theoretical understanding of dormancy and illustrated specific patterns we should expect in empirical data.

May 2020—Jan. 2022 **Predicting complex traits in metagenomes**
Advisor: Jay Lennon

- Leveraged database of thousands of publically available metagenomes to develop random forest classifier for baterial genomes capacity to enter dormancy.
- Enabled further discovery and testing of evolutionary theory by all current and future members of the lab.

Feb. 2020—May 2021 **Testing multivariate information theory methodology**
Advisor: Luis Rocha

- Evaluated several multivariate information theoretic methods for their ability to uncover these structures.
- Generated synthetic time series data from networks with known hypergraph structures.
- Showed that multivariate information theoretic methods can predict some dynamical features while casting doubt on the ability of these tools to reveal underlying structure.

Skills & Achievements

Languages Python, Rust, C++, R, Bash, SQL, LaTeX
Libraries NumPy, Pandas, scikit-learn, TensorFlow, graph_tool, Tidyverse, vegan
Other Software GitHub (GitHub actions for CI/CD), Heroku, BLAST and other bioinformatics tools
Awards NSF National Research Traineeship ($72,000)