ETHAN YOUNG

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EDUCATION

University of Washington *2024–Present*
M.S. Applied and Computational Mathematics

University of California, Los Angeles *2019–2023*
B.S. Data Theory

RESEARCH EXPERIENCES

Shallow vs. Deep Brain Network Models for Mental Disorder Analysis May 2022 - July 2022
Advisor: Carl Yang *Emory University*

- Worked in a team at the Emory REU on Computational Mathematics for Data Science
- Benchmarked the classification performance of graph kernel SVM and various graph neural network models on neuroimaging data
- Gave a talk and presented a poster on the project during the program; published a manuscript and gave a talk at IEEE Big Data 2022

Dynamical Importance and Network Peturbations April 2022 - March 2024
Advisor: Mason Porter *UCLA*

- Utilized perturbation theory and spectral graph theory to investigate how edge removals and additions change the dominant eigenvalue of the adjacency matrix for different random-graph families

Symbolic Regression using Genetic Programming April 2022 - January 2024
PARISlab *UCLA*

- Member of the machine learning subgroup under Yu Song and Mathieu Bauchy at PARISlab (Physics of AmoRphous and Inorganic Solids Lab)
- Refined symbolic regression models to more accurately infer the viscosity of glass materials by optimizing hyperparameters in the *gplearn* and *GPTIPS* packages

PUBLICATIONS

Conferences

Comparing shallow and deep graph models for brain network analysis. Erica Choi, Sally Smith **Ethan Young** (alphabetical). The First International Workshop on Neural Network Models for Brain Connectome Analysis (BrainNN): *IEEE International Conference on Big Data* (Big Data): 4962–4967, 2022.

Journals

Dynamical importance and network perturbations. **Ethan Young** and Mason A. Porter. *Physical Review E* 110 (6): 064304, 2024.

TALKS

Conferences

IEEE Big Data BrainNN Workshop. Osaka, Japan. 2022.