PHOUSAWANH PEAUNGVONGPAKDY (HE/HIM)

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EDUCATION

Ph.D. in Applied Mathematics, Washington State University 2022 – Present
B.Sc. in Mathematics, Harvey Mudd College May 2022
Relevant Coursework: Supervised Machine Learning, Data Structures/Program Development, Algorithms

PROGRAMMING SKILLS

- Experienced in MATLAB and LaTeX, proficient in Python, working knowledge in C++.

RESEARCH & PROJECTS

Analyzing Ranked Choice Data to Detect Gerrymandering

- Cleaned and analyzed Alaska's 2022 ranked choice voting data to evaluate relationships between demographic, geographic, and voting structure.
- Trained a model to detect gerrymandering for a drawn district map given fairness metrics.

Community Detection in U.S. Congressional Data

- Implemented a non-backtracking spectral clustering method to analyze hypergraph data of U.S. Congressional Members in Python.
- Trained a model that predicts labels for Congressional members.

An Adaptive Model of Opinion Dynamics

- Extended the Hegselmann–Krause opinion dynamics model with time evolving connections to understand information spread in a population and simulated the model in MATLAB.
- Presented work at the Joint Mathematics Meeting Conference and the Center for the Mathematical Sciences

EXPERIENCE

Teacher Assistant August 2022 – Present
Washington State University *Pullman, WA*

- Prepped course material and taught two recitation sections for Calculus I.

Grader and Tutor May 2020 – May 2022
Harvey Mudd College *Claremont, CA*

- Graded and tutored students in the following classes: Abstract Algebra I, Differential Equations, Intermediate Probability, Real Analysis I, and Dynamical Systems.

Facilities and Maintenance Student Worker May 2021 – May 2022
Harvey Mudd College *Claremont, CA*

- Assisted with variety of needs ranging from administrative tasks to building maintenance.

FELLOWSHIPS

Napier Fellow. Collaborated with a mentor from Pilgrim Place, a senior community devoted to social justice, and outlined a program to to teach first-generation college bound students about how to use mathematical modeling to understand the housing crisis in their communities.

LEADERSHIP

Project Decode (First Generation Club) September 2019 – May 2022
Collaborated with the Office of Institutional Diversity to budget and lead social meetings/safe spaces, retreats. Organized workshops in financial aid, mental health, healthcare, and professor-student panels.