Eugene Han

EDUCATION

University of Illinois at Urbana-Champaign , Urbana-Champaign, IL Ph.D. Statistics Advisor: Ruoqing Zhu Research Interests: Personalized Medicine, Reinforcement Learning, Biomedical Ap	Aug 2021 - May 2025 oplications, Random Forests
M.S. Statistics GPA: 3.90/4.00	Aug 2019 - May 2021
Carnegie Mellon University , Pittsburgh, PA B.S. Mathematical Sciences with MCS Research Honors GPA: 3.20/4.00 Additional Major in Statistics, Minor in Computer Science	Aug 2015 - May 2019
PROFESSIONAL EXPERIENCE	
 Sandia National Laboratories, Albuquerque, NM Remote Intern Year Round - R&D Grad Developed anomaly detection methods for acoustic signals and images in Python Provided guidance from a statistical perspective to engineering summer interns for Improved the predictive capability of the failure forecasting models for lithium-ion Math & Analytics Graduate Intern Constructed failure forecasting models in R using Isolation Forests for lithium-ion 	Aug 2022 - Sep 2023 (TensorFlow) or modeling acoustic signals batteries May 2022 - Aug 2022 batteries and published an
Locus Analytics, New York, NY Data Analytics Intern • Developed classification models in Python to classify job postings to the firm's prop Analyzed economic complexity of geographically provime to communities using clus	Jun 2018 - Aug 2018 prietary classification system
 Opticlose, New York, NY Data Science Intern Built models in R to predict the success of sales closure given tabular sales data 	Sep 2014 - Aug 2015
RESEARCH EXPERIENCE	

Policy Learning with Continuous Actions Under Unmeasured Confounding

Joint work with Yuhan Li and Ruoqing Zhu

• Developed and implemented the algorithm to perform off-policy evaluation and policy learning under our proposed novel framework in Python (PyTorch)

Oct 2022 - Present

- Devised appropriate simulation settings and applied our method to the German Family Panel pairfam (large longitudinal study)
- Paper in progress, expected to be submitted January 2024

Systems biology of nasal mucosal and peripheral immune responses correlated with viral shedding during human influenza viral challenge in a participant cohort with complex pre-existing immunity *Joint work with the National Institutes of Health (NIH)* Aug 2022 - Present

Developed a novel method to identify biological pathways that contain differentially expressed genes

- Applied our method to gene expression data of nasal mucosal responses, and the respective PBMC data
- Paper in progress, expected to be submitted January 2024

- [1] E. Han and R. Zhu, Modeling and Visualizing Compositional Data with the Fisher-Bingham Distribution. *Joint Statistical Meetings* (JSM), 2023. **Oral Presentation**.
- [2] E. Han and D. Offner, Linear *d*-polychromatic Q_{d-1} -colorings of the Hypercube, *Graphs and Combina*torics, 34 (2018) 791-801.

HONORS & AWARDS

University of Illinois at Urbana-Champaign Block Grant Fellowship	May 2022
Dean's List (High Honors)	Spring 2019 (2018)
Top 20% on the Putnam Mathematical Competition (score: 11, 13)	Dec 2017, 2018
Recipient of the Harris Award at HackCMU	Sep 2015

PROGRAMMING SKILLS

Proficient: R, Python (PyTorch, TensorFlow, scikit-learn), Git Experienced: C, Java