Simon Dovan Nguyen

Seattle, Washington | Website | Github | simondn@uw.edu

EDUCATION

University of Washington, Seattle (expected) Jun. 2027
Ph.D. in Statistics. Advised by: Tyler H. McCormick

University of Michigan, Ann Arbor Apr. 2023
M.S. in Applied Statistics. Advised by: Ben B Hansen and Daniel Almirall
Master's Thesis: Optimal Full Matching Under a New Constraint on the Sharing of Controls

University of California, Irvine Jun. 2021
B.S. in Mathematics (Honors); B.A. in Economics (Honors); Minor in Statistics

RESEARCH EXPERIENCE

Leveraging Large Language Models for Goals of Care Identification in Palliative Care Apr. 2024 - Present
- Deployed designed-based supervised learning techniques to optimize the evaluation of LLM predictions in healthcare.
- Applied a novel post-prediction inference correction, significantly refining downstream analyses for improved LLM accuracy.
- Quantified treatment effects in palliative care, addressing challenges of sparse positive outcomes in LLM predictions.

Active Learning Framework to Mitigate Predictive Multiplicity [OpenReview, NeurIPS] Jun. 2024 - Present
- Engineered a sequential decision making pipeline, reducing data collection cost by 12% while enhancing model performance.
- Designed adaptive sampling strategies to intelligently collect data points that minimize error while enhancing model training.
- Innovated a selection metric to account for predictive multiplicity, addressing the Rashomon Effect to ensure robust models.

Optimal Full Matching Under a New Constraint on the Sharing of Controls Jun. 2021 - Apr. 2023
- Estimated causal effects in observational/non-randomized designs when clinical trials and A/B testing were infeasible.
- Implemented a novel innovation in propensity score matching, reducing the variance of the treatment effect estimate by 9%.
- Conducted a cost-benefit analysis of implementing a life-saving surgical operation that impacts long-term cognitive functions.

Adaptive Intervention Experiment Protocol: Autism Spectrum Disorders (ASD) Application Jan. 2023 - Aug. 2023
- Designed innovative and statistically rigorous protocols to implement advanced experimental methods in clinical trials.
- Integrated behavioral, linguistic, and neurological tailoring variables to design an optimal dynamic treatment regime of ASD.
- Implemented model-free reinforcement learning methods to tailor optimal interventions for families with ASD infants.

PRESENTATIONS

Neural Information Processing Systems (NeurIPS) [Abstract] Dec. 2024
Joint Statistical Meetings (JSM) Aug. 2023
International Chinese Statistical Association Applied Statistics Symposium (ICSA) Jun. 2023
Michigan Student Symposium for Interdisciplinary Statistical Sciences (MSSISS) Mar. 2023
Conference on Statistical Practice (CSP) [Abstract] Feb. 2023
International Conference on Health Policy Statistics (ICHPS) [Abstract] Jan. 2023

HONORS

Rackham Science Award Aug 2023
Rackham Merit Fellowship Aug. 2021
Departmental Honors in Mathematics and Economics Jun. 2021

TEACHING EXPERIENCE

Introduction to Probability and Mathematical Statistics II Sep. 2024 - Present
Elements of Statistical Methods Mar. 2024 - Aug. 2024
Statistical Methods in Engineering and Science Sep. 2023 - Mar. 2024
Introduction to Data Science Jan. 2023 - Apr. 2023
Introduction to Statistics and Data Analysis Jan. 2022 - Dec. 2022

SKILLS

R: `dplyr, tidyr, ggplot2, plotly, shiny, caret, randomForest, xgboost, glmnet, stats, lme4, MASS`
Python: `pandas, numpy, matplotlib, seaborn, scikit-learn, xgboost, tensorflow, pytorch, scipy, keras`
Other: Classical Latin