Winston Chen

Email: chenwt@umich.edu | Website: winstonchenn.github.io | LinkedIn: winstonchenn

Research Interest

I am interested in enabling reliable and interpretable AI-driven decision-making in healthcare, leveraging causal inference and explainable AI. To date, my works have focused on discovering non-additive interactions in deep neural networks and improving treatment effect estimation by explicitly accounting for patient non-compliance.

Education

- **University of Michigan** *2023 - present*
  Ph.D. in Computer Science & Engineeering Ann Arbor, Michigan
  ◦ Advisor: Jenna Wiens
- **University of Washington** *2018 - 2022*
  B.S. in Electrical Engineeirng Seattle, Washington
  ◦ Advisor: William Stafford Noble

Publications & Preprints

C=Conference, J=Journal, S=In Submission

[C.1] **Winston Chen**, Yifan Jiang, William Stafford Noble, Yang Young Lu, **Error-controlled Interaction Discovery in Deep Neural Networks**, in *NeurIPS 2024 workshop on Interpretable AI: Past, Present and Future*, Dec. 2024.

[C.2] **Winston Chen**, William Stafford Noble, Yang Young Lu, **DeepROCK: Error-controlled Interaction Detection in Deep Neural Networks**, in *Machine Learning in Computational Biology 2023*, Nov. 2023.

[S.1] **Winston Chen**, Trenton Chang, Jenna Wiens, **Heterogeneous Treatment Assignment Effect Estimation Under Non-compliance with Conditional Front-door Adjustment**, Under review.

[S.2] **Winston Chen**, Yifan Jiang, William Stafford Noble, Yang Young Lu, **Error-controlled Non-additive Interaction Discovery in Machine Learning Models**, Under review.

Industry Experience

- **RealNetworks** *Sept. 2022 - Sept. 2023*
  R&D Intern. Mentor: Reza Rassool Seattle, Washington
  ◦ Designed facial recognition-based general encryption algorithm.
  ◦ Developed a mobile app for showcasing the encryption technology.
- **NVIDIA** *Jun. 2021 - Sept. 2021*
  Software Engineering Intern, Mentor: John Israeli Remote
  ◦ Designed and implemented a software log analysis framework for assisting the development of Parabricks genomics data analysis suite.

Honors and Awards

- **Rackham Graduate Research Fellowship** *Autumn 2023*
  University of Michigan
  ◦ Merit-based fellowship covering the first year tuition and stipends of the Ph.D. program.
- **Mary Gates Research Scholarship** *Spring 2021*
  University of Washington
  ◦ $5000 award for excellent undergraduate research in interpretable machine learning.
- **Lawrence & Lucille Frey Endowed ECE Scholarship** *Autumn 2020*
  University of Washington
  ◦ $1000 award for Electrical & Computer Engineering (ECE) student with high academic excellency.
- **Herschel & Caryl Roman Scholarship** *Summer 2020*
  University of Washington
  ◦ $2500 award for undergraduate research in genomics.

Teaching Experience

- **Teaching Assistant, EE 241 (Programming for Signal and Information Processing)** *Spring 2022*
  University of Washington
  ◦ Held weekly office hours and lab sessions for around 40 students on Python programming.
- **Teaching Assistant, EE 215 (Fundamentals of Electrical Engineering)** *Winter 2021 & 2022*
  University of Washington
  ◦ Held weekly review sessions and graded homework for around 20 students on fundamental circuit analysis.
- **Teaching Assistant, EE 271 (Digital Circuit and System)** *Autumn 2021*
  University of Washington
  ◦ Held weekly lab sessions and graded projects for around 40 students on FPGA programming.

Services

- **Program Sub-Chair,** Machine Learning for Health (ML4H) Symposium (2024 - current)
- **Secretary,** Computer Science & Engineering Graduate Student Organization, University of Michigan (2024 - Present)