

Academic Research Experience

Carnegie Mellon University - Dept. of Machine Learning

Pittsburgh, PA

ADVISOR: DR. KUN ZHANG, DR. JEFF SCHNEIDER

Sep. 2023 - Present

- Working on causal representation learning from high-dimensional and unstructured data (eg. videos) specifically for robust and accurate generative modelling.
- Investigating methods in causality and reinforcement learning to learn state-action dynamics that are robust to distribution-shifts and shortcuts.
- Developing multi-modal foundation models (including LLMs) for scientific discovery and experimental design with a focus on data-driven nuclear fusion research and tokamak control.

University of British Columbia - Dept. of Computer Science

Vancouver, BC

ADVISORS: DR. DANICA J. SUTHERLAND

Sep. 2020 - April 2023

- Conducted research in the intersection of representation learning and kernel methods.
- Developed a novel fair representation learning method using statistical two-sample testing.
- Developed kernel measures of conditional independence to learn counter-factually invariant deep neural representations.

Talks and Presentations

April 2023. *MMD-B-Fair: Learning Fair Representations with Statistical Testing*. Conference Poster Presentation. 26th International Conference on Artificial Intelligence and Statistics, Valencia, Spain.

November 2019. *Neonatal Anthropometry and Growth Tracking via model based 3D Reconstruction from Video*. Seminar Talk. Perceiving Systems Department, Max Planck Institute for Intelligent Systems, Tübingen, Germany.

Teaching Experience

Fall 2022	Intelligent Systems , Teaching Assistant, University of British Columbia	<i>Vancouver</i>
Spring 2021	Intelligent Systems , Teaching Assistant, University of British Columbia	<i>Vancouver</i>
Spring 2017	Computer Vision , Teaching Assistant, Indraprastha Institute of Information Technology	<i>New Delhi</i>
Fall 2016	Advanced Programming , Teaching Assistant, Indraprastha Institute of Information Technology	<i>New Delhi</i>

Service and Outreach

COMMITTEE MEMBERSHIP

2024 **AI Institute for Societal Decision Making, CMU**, Student Leadership Council

Pittsburgh, PA

PEER REVIEW

- NeurIPS 2024
- AISTATS 2023