Jonathan Chung

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Professional Summary

Machine learning researcher with 4 years of academic research experience in deep learning, reinforcement learning, and geometric learning. Skilled in building ML pipelines using PyTorch, JAX, HPC clusters, and GPU-based workflows. Strong foundations in control theory, information bottlenecks, and representation learning, with an interest in applying advanced ML concepts to practical robust, real-world systems.

Education

Doctor of Philosophy in Computer Science — Lubbock, Texas

Texas Tech University, Edward E. Whitacre Jr. College of Engineering — *January 2025 - Present*

- **Relevant Coursework:** Control Theory II, Introduction to Lie Groups, Algebraic Geometry

Masters of Science in Artificial Intelligence — San Jose, California

San Jose State University, Charles W. Davidson College of Engineering — *January 2022 - May 2024*

- **Relevant Coursework:** Deep Learning, Machine Learning, Data Mining, Big Data Analysis, Reinforcement Learning

Bachelors of Science in Computer Science — Davis, California

University of California Davis, College of Letters & Science — *September 2019 - August 2022*

- **Relevant Coursework:** Algorithm and Design, Operating Systems, Web Programming, Programming Languages

Publications

- **W. Chung**, D. Polani, S. Tiomkin; Structure-Aware Canonical Correlation Analysis on Lie Manifolds. *American Control Conference* 2024;439-446. DOI: 10.23919/ACC60939.2024.10644415

Work Experience

Texas Tech University — Lubbock, Texas

Research Assistant — *Jan 2025 - Present*

- Conducting research on model simplification and representation learning using information bottleneck principles to extract minimal yet sufficient latent representations for decision-making and control.

San Jose State University — San Jose, California

Research Assistant — *September 2023 - May 2024*

- Developed a structure-aware dimensionality-reduction framework that generalized Canonical Correlation Analysis (CCA) to Lie groups, enabling learning algorithms to respect non-Euclidean geometric constraints.

Instructional Student Assistant — *February 2022 - May 2022*

- Taught lab sessions and developed course exercises on reinforcement learning applications in engineering.
- Graded assignments and supported students with RL algorithms, MDPs, value-based learning, and policy-gradient methods.

University of California Davis — Davis, California

Research Assistant — *June 2021 - January 2022*

Awards

Texas Tech University: DGSA Fellowship

Certifications

DeepLearning AI: Generative Adversarial Networks (GANs) Specialization

Technical Skills

Languages: Python, LaTeX, Julia, C++, C,MySQL, R

Developer Tools: Git, Slurm, CUDA, Anaconda, Linux, AWS E2

Technologies/Frameworks: PyTorch, Jax, Keras, OpenAI Gym, NumPy, MuJoCo

Skills: Deep Learning, Computer Vision, Parallel-Processing, Generative Modeling, Natural Language Processing, Reinforcement Learning, Control Theory, Information Theory, Structured Learning, Scientific Writing