Ray Chen

Sunnyvale, CA (94086) | chenz1@ufl.edu | (614)-288-0469 | LinkedIn: @RayChen | rkc8626.github.io

Research Summary

Ph.D. CS researcher focused on applied ML for large-scale model evaluation and diagnostics. Experienced with PyTorch pipelines, distributed GPU experimentation, and rigorous benchmarking/ablation studies.

Technical Skills

Programming & Systems: Python, C++, CUDA, Linux/Unix, Git, Docker, SLURM, LaTeX

Machine Learning: PyTorch, transformer, multimodal modeling, representation learning, retrieval-augmented pipelines

Research & Evaluation: Experiment design, benchmarking, ablation studies, slice-based diagnostics, reproducible evaluation pipelines

Data & Visualization: Large-scale data processing, visual analytics, Matplotlib, D3.js

Education

University of Florida — *Gainesville, FL*
Ph.D. in Computer Science — *Aug 2024 – May 2029 (Expected)*

University of Washington — *Seattle, WA*
Master of Science in Electrical and Computer Engineering — *Sep 2022 – Jun 2024*

The Ohio State University — *Columbus, OH*
Bachelor of Science in Physics and Astronomy — *Aug 2018 – May 2022*

Experience

University of Florida, Dept. of Computer & Information Science & Engineering — *Gainesville, FL*
Research Assistant (ML & Interactive AI) — *Aug 2024 - Present*

- Built reproducible PyTorch-based evaluation pipelines for transformer and multimodal models, covering dataset ingestion, batched inference, metric computation, and automated reporting.
- Designed controlled benchmarking workflows to compare baselines and experimental variants, translating research questions into measurable studies.
- Developed slice-based and distributional diagnostics to analyze model behavior beyond aggregate metrics and identify failure patterns for follow-up experiments.
- Executed distributed inference and evaluation workloads on a SLURM-managed GPU cluster, coordinating parallel runs across nodes to improve scalability and experiment reliability.

University of Florida — *Gainesville, FL*
Teaching Assistant: CIS 4930 Intro to ML — *Jun 2025 - Aug 2025*

- Mentored students on machine learning fundamentals, neural network architectures, and Python-based implementation/debugging workflows.

Airbus Robotics — *Seattle, WA*
Software Engineer Intern — *Jan 2023 - Jun 2023*

- Built data pipelines supporting ML-based inspection workflows on large-scale 3D sensing and scanning data.
- Worked with 3D reconstruction and AR-related systems, helping bridge prototype ML components with deployed engineering workflows.
- Collaborated with cross-functional teams to deliver ML-enabled perception features under real-world data and system constraints.

NR Electric Co., Ltd — *Nanjing, China*
Software & Automation Engineering Intern — *May 2021 - Aug 2021*

- Developed automation software (C++) to monitor low-voltage CPU/PLC testing pipelines, enabling continuous unattended execution and reducing manual intervention by 30%.

Selected Publications, Preprints & Patents

RISE: Interactive Visual Diagnosis of Fairness in Machine Learning Models — *Preprints*
Residual Distributions Capture Details Classical Fairness Metrics Miss — *Under review*
Residual Distribution Fairness: Quantile-Based Auditing for Trustworthy ML — *Under review*
MultiScript30k: Leveraging Multilingual Embeddings to Extend Cross-Script Parallel Data — *Preprints*
Health monitoring system based on wireless perception — Patent: CN116313093A

External Service

Reviewer: ACL 2026, ICML 2026, IEEE ICDE 2025, ICMLA 2025, IEEE BigData 2025, ICMLA 2024, IEEE BigData 2024