Ryan Lee

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EDUCATION

University of Rochester Rochester, NY
Bachelor of Science in Computer Science, *Expected May 2026*
Bachelor of Arts in Mathematics

Coursework: Machine Learning, Computer Networks, Computer Organization, IOS Mobile App Development, Artificial Intelligence, Computation and Formal Systems, Object-Oriented Programming (Java), Linear Algebra

EXPERIENCE

Data Science Intern Jan 2025 - Present
UR Medicine Motion Laboratories *Rochester, NY*
- Designed and deployed a **PostgreSQL** relational database to store and manage patient motion capture data.
- Developed a normalized schema to track patients, sessions, and cohort-specific activity data.
- Implemented multithreaded **ETL** pipelines to ingest, preprocess, and store high-frequency motion data directly from laboratory equipment.

AI Research Assistant Sept – Dec 2024
Rochester Human-Computer Interaction Lab *Rochester, NY*
- Architected a **relational database** for capturing and analyzing feedback from healthcare professionals (**SQLite**)
- Developed a feedback visualization system integrating LLM insights with interactive gauges and real-time conversational data analysis (**JavaScript**)
- Streamlined the deployment pipeline for a LLM on **AWS EC2**, reducing deployment time by 50%
- Contributed to the development of *SOPHIE*, a virtual AI agent designed to help physicians practice complex conversations with terminally ill patients

Software Engineer Intern Jun – Aug 2024
Logical Position *Lake Oswego, OR*
- Implemented analytic tools, for a leading digital marketing agency, used to optimize over **$1.5 billion** in ad spend
- Developed an internal web application with a **Flask** middleware server, enabling employees to access over **2 million** client data points and streamline API communication with Databricks (**HTML/CSS, ReactJS**).
- Engineered a collection of automated data pipelines, optimized for distributed data processing, to feed a new blended reporting product. (**PySpark, SQL, Databricks**)
- Built unit tests to ensure the consistency of all data pipelines

PROJECTS

Orchestra | *PyTorch, Flask, Chart.js, PyTorch DDP, CUDA* *github*
- Designed a distributed LLM training cluster across 10 NVIDIA GPUs in a school lab over wifi.
- Developed a **Flask and FastAPI** architecture with a controller node (REST APIs: /start, /status) and compute nodes (/train, /stats), leveraging **PyTorch** for Deepseek r1 fine-tuning (8B parameters).
- Created a visualization with a **Chart.js** for real-time loss/accuracy visualization and gpu utilization stats.

Rory Rater | *React, Three.js, Flask, Spring Boot, TensorFlow* *github, website*
- Built a full-stack app enabling users to compare golf swings with Rory McIlroy using **Movenet's** pose detection.
- Integrated a **Flask-based** real-time pose analysis service and a **Spring Boot** for a **RESTful API** backend.
- Developed a **React & Three.js** frontend with interactive 3D visualization and precise video playback for swing analysis.

TECHNICAL SKILLS

Languages: C/C++, Java, Python, Rust, JavaScript, HTML/CSS, Assembly language, SQL, R
Frameworks: AWS, Apache Spark, Tensorflow, PyTorch, Scikkit-learn, React, SwiftUI, UiKit
Developer Tools: Git, Azure, Postman, Databricks
Libraries: Pandas, NumPy, Matplotlib, OpenCV