Ryan Ng

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Education

University of Minnesota Twin Cities Sep 2022 - May 2026

B.S. in Computer Science | Minors: Management Finance

Coursework: Operating Systems, Computer Networks, Databases, Machine Learning, Web Infrastructure (AWS)

Experience

Undergraduate Teaching Assistant Jan 2025 - Present

University of Minnesota Department of Computer Science and Engineering *Minneapolis, MN*

- Evaluated Python assignments for **700+** students while providing direct support during office hours to strengthen programming skills.
- Guided **30+** students during lab sessions, boosting overall confidence in Python and programming concepts.

Data Engineer Intern June 2025 - Aug 2025

DigiKey *Bloomington, MN*

- Simplified extraction of Snowflake data to AWS-S3 buckets using **Python**, reducing manual effort and improving delivery time by **60%**.
- Designed dbt models and Snowflake views using **SQL** to transform replicated tables into usable data.
- Engineered ETL pipelines to ingest data from Kafka topics and flat files, boosting reliability and cutting processing errors by **40%**.

Web Data Programming Intern July 2024 - Jan 2025

LinkUp *Minneapolis, MN*

- Collaborated with fellow interns and lead web data engineers to fulfill client requests and deliver valuable job market information to **10000+** companies including many Fortune 100's.
- Streamlined data collection by developing **200+** unique **PHP** and **JavaScript** automation scripts, reducing manual search time by **50%**.
- Orchestrated GET/POST API calls to collect data for **1,000+** jobs, improving hiring insights by **15%**.

Undergraduate Research Assistant Feb 2024 - Jan 2025

University of Minnesota - Parhi Lab *Minneapolis, MN*

- Effectively preprocessed **100+** patient EEG datasets using MATLAB and Python to extract key seizure indicators.
- Enhanced seizure onset detection accuracy by **50%** through refined ML pipelines using Scikit-learn and PyTorch.
- Implemented **5+** custom classifiers with Random Forest and Bagging, whilst integrating feature ranking techniques across **10+** onset intervals to effectively isolate key seizure signals.

Projects

Habitude | *React, TypeScript, Tailwind CSS, Java, Spring Boot, PostgreSQL, Docker*

- Co-developed a habit tracking app with a team of 3 engineers, increasing habit retention by **60%** through daily tracking and milestone reinforcement.
- Built a responsive login UI with **React**, and implemented JWT-based authentication using **Spring Boot**, supporting over **30+** user sign-ups during testing.
- Configured the database using **PostgreSQL**, to manage user information and habit data for over **30+** users.

MRI Brain Tumor Analyzer | *Python, PyTorch, NumPy, Scikit-learn, Pandas*

- Achieved **89.9%** test accuracy by training a custom CNN to classify **7,000+** brain MRI images into 4 tumor types, outperforming a KNN baseline by **18.1%**.
- Accelerated training speed by **30%** via optimized NumPy preprocessing and feature reduction techniques.
- Boosted interpretability with ROC curves, confusion matrices, and graphs, ensuring **94.3%** training accuracy.

Smart Scheduler API | *Python, FastAPI, MongoDB, Vercel*

- Developed a scheduling API using **FastAPI** with **10+** endpoints to help users manage tasks and schedules, improving task organization by **35%**.
- Leveraged **MongoDB** to efficiently store and manage task data, reducing data retrieval times by **40%**.

Technical Skills

Languages: Python, SQL, Java, PHP, C, JavaScript TypeScript, HTML, CSS, MATLAB
Frameworks and Libraries: Spring, dbt, Django, React, PyTorch, Scikit-learn
Tools: AWS, Snowflake, MySQL, PostgreSQL, MongoDB, Docker, Azure DevOps, Git, Pandas, Agile-Scrum, Copilot