Brandon Liau

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Education

Rutgers University Expected May 2025
Bachelor of Science in Computer Science *New Brunswick, NJ*
- **Relevant Coursework**: Data Structures, Computer Architecture, Software Methodology, Internet Technology, Analysis of Algorithms, Principles of Programming Languages, Data Science, Artificial Intelligence

Experience

The New York Times June 2024 – Sept 2024
Backend Engineer Intern *New York, NY*
- Collaborated with a cross-functional team to build an ETL application with Go, processing **300k+ invoices** daily
- Instrumented application with **OpenTelemetry** to generate **20+** custom observability metrics in **Datadog**
- Configured monitors in **Monte Carlo** to detect and alert on data anomalies in a **BigQuery** warehouse
- Developed microservices with **Spring Batch** and **H2**, reducing monolithic JVM load by replacing legacy processes
- Enhanced system reliability by developing unit and integration tests, improving code coverage from **40%** to **90%**

Rutgers University July 2023 – May 2024
Undergraduate Research Assistant *New Brunswick, NJ*
- Implemented adaptive rounding for AWQ, optimizing inference performance across various LLM architectures
- Improved the next word prediction accuracy of a quantized **Llama 2** model by **10%** compared to standard AWQ
- Resolved data inefficiencies in AWQ, increasing inference speed from **110 tokens/s** to **117 tokens/s** for Llama 2

Projects

Tsniper | *Go, SQLite, pprof* Sept 2023 – Present
- Developed a Discord bot that monitors **20,000+ courses** and alerts users to openings with sub-second latency
- Designed and implemented a **SQLite** database to store and serve data to **2200+ users**
- Leveraged **pprof** to identify and resolve performance bottlenecks, decreasing memory usage by **20%**
- Created a mock API enabling comprehensive end-to-end testing and performance benchmarking

Gitlet | *Java, Maven, JUnit* July 2023 – Aug 2023
- Implemented a local version control system mirroring the core functionalities of **Git**
- Optimized storage efficiency with a content-addressable filesystem, eliminating redundant data storage
- Designed a custom serialization protocol, resulting in a **15% reduction** in file size compared to Java serialization
- Ensured application resilience by creating unit and integration tests with **JUnit**, achieving **100%** code coverage

WagerPilot | *Python, MongoDB, GCP* May 2023 – July 2023
- Built a CLI application with tools to calculate probability, convert odds, and find arbitrage opportunities
- Leveraged **BeautifulSoup** and **Selenium** to create a web scraper capable of efficient large-scale data extraction
- Architected and deployed a **MongoDB** database to store and manage the processed data of **5000+ events**
- Automated data pipeline by deploying a **Google Cloud VM** and **cronjob**, resulting in a **95% uptime**

RuTransloc | *Python, scikit-learn, FastAPI, Docker, GCP* Mar 2023 – May 2023
- Developed an AI-driven REST API using **FastAPI** to handle and serve **10,000+ daily requests**
- Generated **90%** accurate arrival predictions by designing and training a SVM with **scikit-learn**
- Optimized and reduced **Docker** image size by **80%**, improving build and deployment speeds
- Leveraged **Artifact Registry** to manage Docker images and enable rapid iteration with **Cloud Run**

Technical Skills

Languages: Python, Go (Golang), Java, JavaScript, C/C++, SQL
Libraries and Frameworks: Scikit-learn, TensorFlow, PyTorch, Pandas, NumPy, Matplotlib, Flask, FastAPI, Echo
Tools: Git, Unix, Jira, Docker, Kubernetes, PostgreSQL, SQLite, MongoDB, Datadog, Sumo Logic, Monte Carlo, Drone, Postman, JUnit, Google Cloud Platform, Amazon Web Services