Brandon Gong

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EDUCATION

Brown University, Providence, RI — Expected Graduation: May 2025
Applied Mathematics and Computer Science Sc. B. — *Cumulative GPA: 4/4.00*

Relevant Coursework: Computer Networks, Multiprocessor Synchronization, Computer Systems, Data Structures and Algorithms, Machine Learning, Computational Linear Algebra, Operations Research, Numerical Optimization, Statistical Inference I.

Extracurriculars: Brown ICPC team (2021 – top 20 in Northeast NA, 2022), Brown Chess Club

PROFESSIONAL EXPERIENCE

The Washington Post, Washington, D.C. — June 2023 – August 2023
Engineering Intern

- Overhauled IP-based paywall targeting functionality, achieving ~250x speedup using segment trees.
- Proved and implemented algorithm that statistically reduced average evaluation time of business rules by up to 50%.
- Integrated into Agile software development lifecycle, attending daily standups, sprint reviews, and refinements.

Axle Informatics (Contractor for National Institutes of Health), Bethesda, MD
Software Developer — August 2022 – March 2023

- Oversaw development of new Neo4j graph database tracking NIH funding on rare disease research.
- Trained BERT-based language model for multiclass classification task on 8.3k PubMed abstracts

Summer Intern — June 2022 – August 2022

- Designed and developed deduplication algorithm, reducing nodes (-43.5%) and relationships (-45.8%) in production database.
- Led and documented setup and configuration of two new Amazon EC2 instances for testing and development.

Full Stack at Brown (club), Providence, RI — October 2021 – May 2022
Fullstack Engineer

- Worked on https://thecriticalreview.org/ (Brown's version of Rate My Professor) with a team of 9 using agile/scrum methodology.
- Implemented new account creation, email verification, password encryption flow.
- Developed new REST API endpoints to generate PDFs of responses and statistics from student survey data.

RESEARCH

Distributed Systems Research — January 2023 – present
Undergraduate Research Assistant

- Researching novel NoSQL distributed database architecture for efficiently querying dynamic keys via multidimensional hashing.
- Developed, tested, and benchmarked efficient algorithms for insertion, deletion, and querying.

PORTFOLIO

siliconnn — March 2023 – May 2023
https://github.com/brandon-gong/siliconnn

- Neural network implementation in pure ARM64 Assembly for Apple Silicon.
- Parsing datasets from CSV, configurable layer sizes, training with backpropagation.

ptree.ml — July 2022 – August 2022
https://github.com/brandon-gong/ptree.ml

- Multipurpose data serialization / deserialization library for OCaml.
- Parse INI, JSON, or XML to unified data structure that allows efficient, persistent edits.

neche — December 2021 – January 2022
https://github.com/brandon-gong/neche

- Neuroevolution-based checkers engine written in Rust.
- Implements evolution, move generation, and minimax evaluation with pruning and quiescence search.

SKILLS

Best Languages: Java, JavaScript, C, Python

Technologies: Java EE CDI, Quarkus, Firebase, React, Sklearn, Neo4j, Pytorch, Liquibase