



# 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:** Database Management Systems, Operating Systems, Computer Networks, Compilers and Program Analysis, Multiprocessor Synchronization, Data Structures and Algorithms, Machine Learning, Optimization and Stochastic Calculus.

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

## PROFESSIONAL EXPERIENCE

**The Washington Post**, Washington, D.C.

*Engineering Intern*

June 2024 – August 2024

- Designed and implemented new flexible backend payment system for all customer-facing WaPo services.
- Served as on-call engineer, responding to live incidents and monitoring systems.
- Built new proposed site search experience featuring improved autocomplete relevance and instant result suggestions.

*Engineering Intern*

June 2023 – August 2023

- Overhauled payroll 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.

**Brown University**, Providence, RI

August 2024 – December 2024

*Undergraduate Teaching Assistant, Computer Networks (CSCI 1680)*

- Serve as mentor to teams as they implement IP and TCP in C, C++, Go, or Rust.
- Hold office and debugging hours throughout the semester.
- Assist in development of course support materials and interactive grading of projects.

**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.

## SELECTED PROJECTS

**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.