# Julian Dai

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Creative and passionate college student seeking challenging software engineering opportunities in a collaborative environment. Fast learner with strong leadership and communication skills.

## Education

**Brown University**                                                                                                                   Providence, RI
*Sc. B CS and Mathematics (GPA 4.0)*                                                                     *Sept. 2022 - Expected May 2026*

- Relevant CS Coursework: Operating Systems, Applied Cryptography, Deep Learning, Software Engineering, Algorithms, *Networks, Database Management, Datacenter and Cloud Operating Systems (2024-2025)*
- Relevant Math Coursework: Abstract Algebra, Statistical Inferences, Differential Geometry, Real Analysis

## Experience

**ATA, Co-founder**                                                                                                                    Jan. 2024 - Present

- Developing course-integrated, LLM-powered, cognitive tutor, empowered by multiagent pipelines, retrieval augmented generation, and knowledge graphs built on Google Cloud, Vercel, and React. Funded by Hazeltine Grant and B*.
- Deployed to 400+ students in Brown's Deep Learning course, handling over 5k queries; set to deploy to 1k+ students at Brown University in the Fall of 2024, including Prof. Andries van Dam's CS15

**Atlas Lab, Research Assistant**                                                                                              June 2023 - Present

- Language-level Syscall Filtering
  - ❖ Developed a system that incorporated dynamic and static language analysis to perform language-level system call filtering in JavaScript under Prof. Nikos Vasilakis. Conducted a large-scale study on NPM, curating statistics on three million JavaScript packages in the registry to motivate the effectiveness of syscall filtering in JavaScript.
- LLM-Driven Secure Regeneration
  - ❖ Designed and implemented a system to regenerate third party libraries for supply chain security using LLMs, dynamic in-context learning and iterative revision optimizations to improve accuracy with DSPy under Prof. Nikos Vasilakis and Prof. Martin Rinard.

**Brown University, Teaching Assistant**                                                                             Jan. 2024 - June 2024

- Guided students, hosting weekly labs and hours, in concepts related to deep learning including neural networks, convolution, RNNs, seq2seq, and reinforcement learning in Prof. Rhitambhara Singh's deep learning class.

## Projects

**Weenix** | *C*                                                                                                                                May 2024

- Unix-based OS kernel implemented in C. Implemented processes/threads, drivers, a file system, virtual memory, and syscall API.

**Distributed Password Manager** | *C++, CryptoPP*                                                               March 2024

- Decentralized password manager that supports the storage of user information in a cryptographically secure and distributed manner, utilizing AES encryption and Shamir Secret Sharing.

**Pix2Pix Terraform** | *Python, Tensorflow, PyTorch*                                                                    May 2023

- Implementation of the GAN architecture in the Pix2Pix paper, trained on a dataset of curated satellite imagery to recreate earth-like satellite imagery from elevation maps.

## Skills and Interests

**Languages**: Fluent English, Proficient in Spanish and Chinese
**Technical**: Python, Javascript, C, C++,  Java, Shell, HTML
**Tools**: System Design, Security, LLMs, Data Science, Tensorflow, React, Flask, Google Cloud (GCP), GitHub, AWS
**Interests**: Tennis, Hiking, Fishing, Chess, Reading