

# Edward Wibowo

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## EDUCATION

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### Brown University

August 2022 – May 2026

*Bachelor of Science in Computer Science and Mathematics*

*Providence, RI*

- **GPA:** 4.0/4.0
- **Courses:** Data Structures & Algorithms, Computer Systems, Statistical Inference, Honors Linear Algebra, Abstract Algebra, Theory of Computation, Computer Networks, Compilers, Multivariable Calculus
- **Teaching Assistant:** Computing Foundations: Program Organization (Fall 2023)

## EXPERIENCE

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### Serre Research Lab

June 2023 – Present

*Web Development Intern*

*Providence, RI*

- Developed full stack application to gather human object recognition data using **React**, **PostgreSQL**, and **Python**.
- Designed and created **Go** server backend with secure user authentication using **JWT**, **bcrypt** hashing, and **HTTP** cookies.
- Integrated human data with **1,300,000+** images from **ImageNet** to train **AI algorithm** to become more human-like.
- Scaled deployment by fully containerizing application with **Docker** on **Google Cloud Tensor Processing Units (TPUs)**.

### Brown University Computer Science Department

April 2023 – Present

*System Programmer*

*Providence, RI*

- Managed **600+** distributed systems and department services using **root privileges** as part of Brown CS technical staff.
- Resolved security vulnerabilities related to account management software and **OpenVPN** with **13,000+** certificates.
- Implemented hardware authentication to secure SSH connection to administrative machine using **YubiKey PIV** module.
- Address technical inquiries from **1,000+** faculty and students using **Linux** and **Secure Shell (SSH)** expertise.

### Brown RISD Game Developers ([itch.io Link](https://itch.io))

September 2022 – Present

*Game Developer*

*Providence, RI*

- Coordinated with **20+** programmers and artists to ideate, develop, and publish **2** games while ensuring artistic vision.
- Developed custom item inventory and trading system to facilitate core gameplay mechanics using **Unity** game engine.
- Implemented **3D procedural generation** logic, user interface interaction, and pixel shader using **Unreal Engine**.

## PROJECTS

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### Reverse Proxy ([vltproxy](https://vltproxy.com)) | *Go, Docker*

July 2023 – Present

- Developed **YAML**-configurable reverse proxy to serve multiple services with middleware support using **Go**.
- Created custom **load balancing** strategy with concurrent health checks, reducing memory consumption by **3x**.
- Implemented tight integration with **Docker** to dynamically route traffic to containers by querying **Docker Daemon**.
- Followed test-driven development (**TDD**) and created integration testing API to achieve **100%** test coverage.

### Rust Game Engine ([ctrait](https://ctrait.com)) | *Rust, SDL2, nalgebra*

July 2021 – August 2021

- Developed **Rust** game engine with original trait-based entity-component-system (**ECS**) architecture using **SDL2**.
- Ensured **thread-safety** between systems and components by utilizing **atomic reference counting** and mutexes.
- Wrote custom texture resource manager to facilitate **multithreaded** texture loading and unloading using Rust lifetimes.
- Achieved **100%** documentation coverage using **Rustdoc** along with a suite of examples.

### Competitive Programming Training Platform ([UFDS Training](https://ufds.com)) | *TypeScript, Next.js, Firebase*

June 2021 – Present

- Developed competitive programming educational web platform with **Next.js** and **Firebase** to support **1000+** users.
- Scaled platform to support active user base by optimizing database queries and utilizing **server-side rendering**.
- Implemented user authorization to securely store user data and progress using **Firebase Authentication**.
- Built content system with embedded programming problems using **MDX JS** to host **200+** interactive articles.

## AWARDS

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**Wolfram Award**, Hack@Brown 2023

**8th Place**, Bevy Game Jam #1 2022

**Best Pre-University Hack**, Hack&Roll Hackathon 2021

**2nd Runner Up**, AWS Build On Hackathon 2020

**Bronze Medalist**, Singapore National Olympiad in Informatics 2020

## SKILLS

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**Programming Languages:** Python, JavaScript, TypeScript, C, C++, C#, Go, Rust, Java, PHP, Racket

**Frameworks:** React.js, Next.js, Node.js, Express.js, Flask, TailwindCSS, Catch2, Xlib, SDL2

**Technologies:** Git, Docker, Linux, MongoDB, Firebase, PostgreSQL, Unity, Unreal Engine, Traefik, NGINX, Bash