

Shimu Pan

Pans@rpi.edu | [Linkedin.com/in/shimupan/](https://www.linkedin.com/in/shimupan/) | [Github.com/shimupan](https://github.com/shimupan)

EDUCATION

Rensselaer Polytechnic Institute

Troy, NY

Bachelor of Science in Computer Science; Dual major in ITWS

Aug. 2022 – May 2026

GPA: 3.87

Awards: Dean's Honor List, Rensselaer Leadership Award

Relevant Coursework: Data Structures, Algorithms, Computer Organizations, Operating Systems

EXPERIENCE

Undergraduate CS Teacher's Assistant

Aug. 2023 – May. 2024

Rensselaer Polytechnic Institute

Troy, NY

- Collaborate with Data Structure and F.O.C.S. instructors to develop interactive course materials, resulting in a 15% increase in student exam scores.
- Conduct weekly office hours to a group of 30 and provide assistance to address students' questions and concerns.
- Lead weekly labs for a class of 32, reinforcing concepts taught in lectures and offering students additional support.
- Consistently grade an average of 25 homework assignments per week and 4 exams per term, while ensuring fair and consistent evaluation.
- Attend weekly TA training workshops 1 hour per week to enhance teaching and leadership ability.

PROJECTS

LineupX - Social Media Page for Lineups | *React, Tailwind CSS, TypeScript, Mongo, Express, Docker*

[Github](#) — [Live](#)

- Project lead for a group of 3 developers in the development of this open-sourced MERN project.
- Achieved a 45% improvement in image load time leading a team of developers to implement user authentication and image upload into a CDN.
- Decreased amount of malicious posts by 100% by creating an admin panel that allowed moderation of the whole site including users and incoming posts.
- Increased user retention and interactions by 50% across 3 months through optimization and redesign of pages to display lineups to both mobile and desktop views properly.
- Boosted production quality and speed by 20% and enhancing developer experience by implementing numerous tests using Cypress and Github Actions for (CI/CD).

JChess - Multiplayer Chess Program with AI | *Java*

[Github](#)

- Designed a Chess application in Java following OOP principles and AI integration.
- Implemented Chess rules, such as En-Passant, Castling, and Promotions along with common Chess programming paradigms such as FEN and UCI (Universal Chess Interface)
- Developed and optimized the minimax search algorithm with alpha-beta pruning to efficiently explore possible moves and counter-moves.
- Noted potential drawbacks due to the structure of a OOP representation of a Chess board, leading to slower performance compared to binary bitboards.

Guess The Imposter | *React, Socket IO, Tailwind CSS, MongoDB, Express*

[Github](#) — [Live](#)

- Developed a fun online multiplayer game with an average player count of 5-10 and average playtime of 1.5 - 2 hours.
- Implemented Socket.IO, resulting in a 50% reduction in latency for real-time data exchange between clients and servers, leading to a more responsive and engaging user experience.
- Scaled the server using load balancers and MongoDB to support over 100+ concurrent players on the site at once.
- Enhanced user experience by enabling diverse game modes and variations within the same game.

TECHNICAL SKILLS

Languages: Python, C/C++, Java, JavaScript/TypeScript

Frameworks: React, Tailwind, Node.js, Material-UI

Developer Tools: Git, Docker, VPS, Linux