

# Patrick Blood

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## EDUCATION

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### Brigham Young University

Provo, UT

*Bachelor of Science in Computer Science: GPA 3.79/4.00 (Major: 3.81)*

*Sep. 2021 – Apr. 2027*

**Relevant Coursework:** Software Design, Algorithm Design Analysis, Web Programming, Computer Systems

## TECHNICAL SKILLS

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**Languages:** Java, Python, C/C++, SQL (MySQL), JavaScript, HTML/CSS

**Frameworks:** React, Node.js, JUnit, pytest

**Developer Tools:** Git, Docker, Google Cloud Platform, AWS, VS Code, Maven

## EXPERIENCE

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### Software Engineer Internship

May 2022 – Aug 2022

*DT Media LLC*

*Cumming, GA*

- Designed and implemented a product tracker using the Keepa API to monitor price history and availability across 10,000+ Amazon listings, improving data accuracy and automation for the product management team
- Demonstrated a growth mindset by independently researching API integration best practices
- Collaborated with a team engineers in an agile environment to contribute to sprint planning and peer code reviews
- Presented project results to the General Manager, translating technical outcomes into business impact

### Student Computer Specialist Representative

Apr. 2025 – Present

*Brigham Young University*

*Provo, UT*

- Resolved 20+ technical support requests per week for students, faculty, and staff, ensuring minimal downtime for academic and administrative work
- Provided empathetic, customer-focused service that was efficient and practical
- Trained 2 new student specialists, fostering teamwork and knowledge sharing

### Teacher's Assistant - Discrete Structures & Computational Theory

Dec. 2024 – Present

*Brigham Young University*

*Provo, UT*

- Supported learning for 120+ students by leading office hours, problem-solving workshops, and review sessions
- Graded and reviewed 250+ assignments/exams with consistent accuracy and timeliness, ensuring fairness and transparency in evaluation
- Motivated students to engage with abstract CS concepts by connecting theory to practical applications

## PROJECTS

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### Simple Ray Tracing Engine | *Java, Git*

July 2025 – Present

- Designed and implemented a 3D ray tracing render engine from scratch in Java to explore rendering concepts
- Built a custom rendering pipeline that outputs PPM image files with support for multiple material types
- Applied computer graphics principles such as ray-object intersections, reflection, and refraction physics
- Developed object-oriented architecture allowing extensibility beyond current support for spheres (e.g., future shapes, lighting models, textures)

### Multiplayer Chess Application | *Java, MySQL, Maven, Git*

Jan. 2025 – Apr. 2025

- Designed and implemented a client/server architecture supporting multiplayer chess games, demonstrating mastery of HTTP, WebSocket communication, and database persistence
- Implemented core chess logic, game state management, and networking protocols, enabling real-time gameplay
- Applied software engineering best practices including unit testing, serialization, and security