

# JOSE PEREZ

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## EDUCATION

### Worcester Polytechnic Institute (WPI), Worcester, MA

B.S./M.S. in Computer Science and Artificial Intelligence

4.0 GPA

May 2026

**Relevant coursework:** Machine Learning DevOps\* • Reinforcement Learning\* • Data Mining\* • Computer Networks • Software Engineering • Data Structures/Algorithms • Object-Oriented Programming • Computer Graphics  
(\*to be completed by November 2024)

## SKILLS

- **Programming Languages:** Typescript, Java, C, C++, Python, MATLAB, PostgreSQL, R, Ruby
- **Frameworks:** React, Express, Next, MUI, Tailwind, AWS (ES, RDS), Prisma, Pandas, Scikit-Learn, Pytorch
- **Development Tools:** Git, Jira, AWS, Figma, Docker, Postman, WebStorm, Wireshark, Hugging Face, Azure
- **Languages:** Spanish (Native), English (Fluent), French (Advanced)

## PROJECTS

### Software Engineering, Collaboration with Brigham & Women's Hospital, WPI March 2024 – May 2024

- Engineered a full-stack WebApp prototype for Mass General Brigham, as part of a 10-person team, following Agile methodologies, daily scrum and software design patterns throughout the software development lifecycle.
- Designed and deployed the application using React.js, TypeScript, Material UI, Express.js, and Prisma ORM on AWS EC2 with Docker and AWS RDS for cloud storage.
- Integrated hospital pathfinding and editing features, along with 4 service request modules, using authentication and analytics, showcasing potential features and UI designs to the hospital software development team.
- Directed a team of 5 engineers as the algorithm Assistant Lead Software Engineer, collecting 30+ requirements through surveys, interviews, and brainstorming. Created user stories, scenarios, and story boards and 4 UML diagrams for the pathfinding component of the application, including use-case, class, and activity model.

### Computer Networks Study, Collaboration with VIASAT, WPI November 2023 – May 2024

- Collaborated with network engineers to test a TCP Congestion Control algorithm for high-latency satellite connections, boosting throughput by up to 20% over Hystart by exiting the slow-start phase before packet loss.
- Automated data collection via Python scripts, capturing PCAP and log files from 140 satellite connections across 7 campus sites, using iperf3 and SSH to compare Linux Hystart performance with the new algorithm.
- Analyzed network data with Pandas and generated reports to demonstrate improvements in overall throughput.

### Numerical Methods Research, EREE program WPI June 2023 – August 2023

- Conducted research on real-time heat diffusion using the Finite Element (FEM) and Finite Differences (FD) methods across 30 room configurations, applying numerical analysis and computational modeling techniques.
- Implemented the heat partial differential equation in MATLAB as a recursive matrix equation on a vertex mesh and identified the 3 most optimal configurations through statistical assessment using L2 and L $\infty$  norms.

### Machine Learning Model Fine Tuning, WPI January 2024 – February 2024

- Fine-tuned a ML model using OpenAI API and Scikit-Learn, enhancing QA dataset accuracy by 15%.
- Evaluated performance and optimized model with data preprocessing techniques, reducing hallucinations.

## ADDITIONAL EXPERIENCE

- **Teaching Assistant, CS** (August 2023 – Present): Led lab sessions, assessed exams, held office hours, and provided one-on-one help across 6 different CS courses to help students understand programming concepts.
- **Hotel Receptionist, Hyatt Collection**, Almeria, Spain (Summer 2024): Managed 400-room hotel operations, including reservations and maintenance. Delivered high customer service and increased upsells by 10%.
- **Student Caller, WPI Advancement services** (August 2022 – June 2023): Engaged alumni to foster community and maintain WPI relationships, contributing with the ambassador team to secure \$1M in support.
- **Lifeguard, SAR**, Almeria, Spain (Summer 2021): Ensured safety at 2 beaches with water rescues and first aid.
- **Volunteer, Red Cross**, Almeria, Spain (Summer 2020): Tutored 15 immigrant children in Spanish and math.