

JOSE PEREZ

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EDUCATION

Worcester Polytechnic Institute

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

GPA: 4.0

Worcester, MA

May 2026

- Courses: Reinforcement Learning, Machine Learning, Algorithms & Data Structures, Numerical Methods, Discrete Mathematics, Operating Systems, Computer Networks, DevOps, Software Engineering, Data Mining.

SKILLS

- *Languages & Frameworks:* C++, Python, Rust, Java, SQL, Bash, MATLAB, R, PyTorch, TensorFlow, scikit-learn.
- *Tools & Platforms:* Docker, Kubernetes, AWS, Redis, RabbitMQ, Prometheus, Grafana, Humio, Git, Jira.

EXPERIENCE

Bloomberg L.P.

Software Engineering Intern

New York, NY

May-Aug 2025

- Engineered a distributed C++ rate-limiting library featuring Redis and a sharded DB to enforce tiered quotas on 10K+ daily requests across Multi-Asset Risk System (MARS) workflows, serving 3 internal teams.
- Integrated a configurable burst control proxy to throttle per-instance requests across 20+ production clusters.
- Featured C++ macros for real-time cost monitoring and alerting via Humio and Grafana, surfacing 9k metrics daily.
- Achieved 80% unit-test coverage and built a multithreaded Python stress tester to validate peak-time reliability.

ViaSat

Computer Networks Research, WPI

Worcester, MA

November-May 2024

- Evaluated a custom congestion control algorithm for high-latency satellite links, achieving 20% higher TCP throughput than Hystart by preemptively exiting the slow-start phase to avoid packet loss.
- Developed Python scripts to automate benchmarking and data capture (PCAP, logs) across 140 connections at 7 test sites via iperf3 and SSH into the Linux-based satellite systems.
- Analyzed time-series network data with Pandas to quantify performance deltas and guide further algorithm tuning.

Mass General Brigham

Software Engineering Collaboration, WPI

Boston, MA

March-May 2024

- Led backend pathfinding systems for a hospital navigation app (React, Express, PostgreSQL) deployed on AWS.
- Integrated authentication, service modules, analytics and map editing features as part of a 10-person team.
- Led a 5-engineer sub-team as the Algorithm SWE Lead, conducting daily scrums, creating user stories, gathering 30+ requirements, and designing 4 UML models for core pathfinding features.

Worcester Polytechnic Institute

Numerical Methods Research

Worcester, MA

June-August 2023

- Researched real-time heat transfer solvers for PDE's using MATLAB, focusing on room cooling efficiency.
- Implemented the heat equation as a recursive matrix system over vertex meshes using the FEM and FD methods.
- Identified the top 3 optimal room layouts for cooling efficiency via statistical analysis using the L^2 and L^∞ norms.

Worcester Polytechnic Institute

Teaching Assistant

Worcester, MA

Aug 2023 - Current

- Led labs, coached lectures, graded exams and provided 1:1s across 9 CS courses including OS, SWE and Networks.

PROJECTS

Deep Q-Learning Network

September-December 2024

- Implemented and trained a Deep Q-Learning Network (DQN) using PyTorch to master the Atari game Breakout.
- Achieved an average reward of 220 points over 100 episodes using "Rainbow" optimizations, including prioritized experience replay, double Q-learning, dueling architecture, multi-step learning, and noisy networks.

Moodle Well-being App

Mar-May 2025

- Developed an Android mental health journaling app using Jetpack Compose, SQLite, and MVVM architecture.
- Integrated Gemini for conversational journaling, sentiment analysis, mood trend tracking, and motivational insights.
- Utilized historical chats, photos, and mood data with prompt engineering to create personalized monthly summaries.