Mohammad Robati Shirzad

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EDUCATION / TRAINING

- **AWS Certified Solutions Architect — Associate** — AWS
  Amazon Web Servers (link) — *Dec. 2022 – Dec. 2025*

- **Master of Applied Science in Computer Software** — Waterloo, ON, Canada
  University of Waterloo, Electircal and Computer Engineering Dept. — *Sep. 2021 – May 2023*

- **Bachelor of Science in Computer Engineering** — Tehran, Iran
  Tehran Polytechnic — *Sep. 2017 – Sep. 2021*

EXPERIENCE

- **Software Engineer** — Toronto, ON
  Huawei Canada (contractor full-time until Jan 2024, then permanent full-time) — *May 2023 – Present*
  - Working closely with the research and development team to deliver our high quality, secure WASM based Cloud Services product. Also, helping with expand the capabilities of the product with new functionality and create a robust WASM based serverless platform with the latest technologies. Quickly onboarded, and started contributing within just two weeks of joining. Helped with a lot of issues involving adding new features, addressing security vulnerabilities, and executing codebase refactoring. Based on the feedback, after joining the team, my contributions accelerated the development timelines.

- **Lab Instructor / Teaching Assistant** — Waterloo, ON
  University of Waterloo — *Jan. 2022 – April 2023*
  - As a TA, I instructed high-performance, multithreaded programming in Rust and C, conducting code review sessions that significantly improved students' coding skills, leading to many securing positions at major tech companies. I streamlined professor tasks by developing automated grading scripts, ensuring efficient feedback delivery for the students. I received excellent reviews throughout my tenure.

PROJECTS

- **Leveraging path-based code representations for improved WebAssembly program analysis**: I developed two novel code representations for AST-based sequential encoding of Wasm binaries as well as a code embedding, which can be used in both traditional machine learning models and advanced AI models such as sequence-to-sequence and transformer-based models like GPT, showcasing my advanced abilities in AI.

- **Ruxanne**: Ruxanne is a tool that analyzes and extracts fix patterns in Rust by implementing a novel embedding of Rust code into fixed-sized vectors. By mining top 18 most-starred Rust projects in Github, Ruxanne discovered 20 groups of cross-project bug fix patterns, which are important for automated program repair.

- **Spread out your carpet with AR!**: I created a fully functional mobile app using Viro React framework for React Native that allows users to browse and virtually place carpets on the floor, showcasing my advanced capabilities in mobile and front-end development, proficiency in rapid development and usage of cutting-edge technologies.

SKILLS

- **Programming Languages**: Rust, Javascript, Python, C/C++, Java, Racket
  Frameworks: React.js, Node.js, React Native, Express.js, Three.js, Viro React AR/VR, WebGL, Bootstrap
  AWS Technologies: EC2, S3, RDS, Aurora, DynamoDB, Lambda, CloudFront, SNS, SQS
  Other Skills: WebAssembly, WASI, WasmEdge, Wasmtime, Docker, Kubernetes, Jenkins, Git, Unity, CUDA, HTML5 / CSS3, Agile, Scrum
  Soft Skills: Communication, Leadership, Teamwork, Critical thinking, Creativity, Adaptability, Problem-solving, Time management