

Parsa Ahmadizadeh

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Software engineer with experience developing all of a medical company's software that interfaces with hardware

SUMMARY OF ACCOMPLISHMENTS AND CORE STRENGTHS

- **Software Development & Solutions Engineering:** Served as the sole software engineer at a medical equipment company, developing a solution for a \$3M contract after the previous solution proved unsuccessful. Created an AI-based personal assistant and developed a program that enables the review of load on GPUs.
- **User Experience:** Ensured that users of complex medical products had the expected experience despite the large number of use cases.
- **Project Management:** Managed complex projects from start to finish, structured workflows, and adhered to Agile methodology, frequently completing projects ahead of schedule.
- **Communication:** Interfaced directly with clients. Wrote user documentation for software. Developed tailored training programs that improved community wellness and athletic performances.

*Software Engineering • Embedded Software • System Software • Backend Software • SDLC • AI • Machine Learning
Full-stack Software Development • Relational Databases • Threading APIs • Build Processes • Computer Architecture
C++ • C • Python • Java • JavaScript • React • Rust • SQL • Object-oriented Programming • TensorFlow • PySpark
GPU Architecture • SoC Architecture • x86 • Architecture • Assembly • Scikit-learn • Concurrent & multithreaded Programming
Debuggers • REST APIs • Linux (Bash, Kernel Architecture) • CI/CD • Git • GitHub • Agile Methodology • Docker*

WORK EXPERIENCE

Pioneer Engineering, Irvine, CA/Remote; *Software Engineer* (April 2023–Present)

Worked as the only software engineer at a company that manufactures a large mixer for making IV fluids. Initially, salvaged a \$3M project for the largest client after the prior solution did not work, finished it in 1/3 of the expected time, and continued to develop software for the product.

- Developed software in C and assembly for the custom center for several types of IV systems.
- Wrote middleware that connected the system with the CPU to automate functions. Converted binary code into information users understand.
- Enabled the system to achieve 99.9% uptime.
- Defined software requirements and conducted the testing.
- Created the company's software development process. Structured it, prioritized tasks, and established coding standards. Built the business's first automation pipeline and made code modular.
- Wrote the documentation for the software, including a description of what it does and how to use it.

LocaMax Inc., Richmond Hill, ON; *Project Manager* (February 2021–March 2023)

Managed the complete renovation of a home (including foundation, plumbing, and electrical) after the owner was told it would be better to rebuild it. Completed the project for \$1.5M versus the \$2M target by streamlining workflows and leading the development of niche technologies.

- Led team to create custom tools, including a concrete saw, drywalling equipment, guardrails for custom woodwork sawing, a concrete form, and wrenches for heavy lifting. Prevented the need for fibreglass by using concrete to build the pool.
- Managed the crew, scheduled tasks, and monitored work for quality. Taught members to build the electrical and HVAC systems from scratch.
- Worked as the point of contact with the owner, suggested solutions, and updated her on project status.

NueWal, Toronto, ON; Technology Officer (March 2019–December 2020)

Increased the number of people who contacted the company (a building materials supplier) by 50% and the number of page views >6x by developing software for its website.

- Maximized the site's responsiveness on mobile devices and laptops. Coded in React, HTML, CSS, and JS.
 - Added features to the site, including search and communication forms.
 - Updated the site as the company evolved. Added a project portfolio and product information as NueWal gained the rights to represent other businesses.
 - Migrated the company to the cloud, including data, imaging, project calendar, and financial planning spreadsheet. Managed the information and ensured that the appropriate teams could access it.
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PROJECTS

Arch AI (in progress)

- Created a custom Arch Linux distro which has a built-in assistant. Enabled it to review loads on GPUs and switch between models based on use (e.g., when used for AI or other functions).
- Enabled adaptive on-device & remote compute, file organization by meaning, context-aware sidebars, modelling of toggles, and privacy-first defaults.
- Allowed the system to connect with OpenAI.
- Developed a file manager similar to Windows but with other backend features.

Danus: Local AI Assistant

- Utilized REST APIs for file-aware QA, long-term and short-term memory, and model selection. Used Python, Flask, and Torch.
- Implemented a chunking/embedding pipeline, retrieval, and action logging system.

Retail Sales Analytics

- Developed a sales analytics system for one of Canada's largest data consulting companies, using Databricks, PySpark, and Spark ML.
- Built a medallion architecture to ingest, clean, and aggregate sales data.
- Engineered features and trained a Spark ML model to recommend purchases to customers.

Quantum Outlier Detection

- Enabled detection of anomalies in financial data by using quantum and virtual computers to analyze investment opportunities. Obtained the same results as conventional computers.
- Used 2 different algorithms, which helped each other adjust.
- Explored a quadratic-speedup approach to anomaly detection.
- Utilized quantum counting to set parameters for outlier detection, and employed Grover-style search to identify outliers.

Other Projects

- Developed an E-commerce website in PHP, MySQL, Angular, CSS, HTML, and JavaScript. Included review capabilities.
 - Built the backend of an E-commerce store in Java.
 - Created a custom data structure and developed an algorithm to solve the game Boggle on a 20x20 board quickly.
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EDUCATION

B.Sc (Honours), Computer Science, Toronto Metropolitan University, Toronto, ON (June 2025)

- 4.0/4.0 GPA, Dean's list, completed 21 courses (more than two years' worth of courses) in one year.
- Relevant courses: Machine Learning, Data Science, Probabilities and Statistics, AI, Data Structures, Database Systems, Algorithms (in C++), Discrete Structures, Discrete Math, Calculus, Linear Algebra, Quantum Software Engineering, Operating Systems (in bash and C), Computer Organization 1 & 2 (computer and SoC architecture, RISC, ARM & x86 instruction sets, and assembly).

IBM's Basics in Quantum Information certificate (March 2025)