Alex Roth

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EXPERIENCE

Miovision Technologies
Various   *Jan 2017 - Present, Kitchener*

Software Architect, June 2022 - Present

- Designed and implemented Application Platform - the ability to run first and third-party "apps" on devices securely.
- Refined product ideas into actionable work items for engineering teams.
- Planned long-term technical strategy and work with teams to align engineering work towards those goals.
- Worked at a code level within individual teams to take on complex tasks and accelerate engineering teams.

Senior Software Developer, Feb 2021 - June 2022

- Broke down work into tasks and stories, working with the team to share knowledge of new technical research.
- Served as primary escalation path for complex customer support issues, often directly engaging with customers to solve problems.
- Mentored junior team members to bring up their skill levels and instill good habits.
- Designed and implemented a new safety-critical product to unlock corporate partnerships.

Software Developer, April 2020 - Feb 2021

- Planned and executed porting our product to a new generation of hardware, including increased security and new capabilities. Worked at a software layer to port functionality, at a firmware level to dig into kernel bugs and propose solutions, and in the cloud to make modelling changes and implement a TPM remote attestation scheme.

Software Developer Co-Op & Part-Time, Jan 2017 - April 2020

- Reverse-engineered proprietary hardware devices to provide monitoring and analytics beyond what our competitors are capable of.
- Designed and developed remote-access tool still used by a majority of our customers.
- Planned and implemented an improved cloud VPN solution for our devices, reducing our ongoing costs by nearly 50%.

Milq
Android Development Intern   *May 2016 - Aug 2016, Toronto*

Worked as the sole developer for Milq's Android app during a product pivot, involving rapid prototyping and close coordination with stakeholders.

MagmaStone
Freelance web and mobile development   *2012 - 2015, Remote*

Created MagmaStone to work as a freelancer on many contract programming jobs. Built applications from basic specifications into deliverable products.

- Created applications for many different platforms, including Android, iOS, Web, desktop, and backends.
- Developed strong communication skills through determining requirements from non-technical clients.

SUMMARY

Experienced software developer with over 12 years of experience in everything from microcontroller development to mobile apps and cloud services (and everything in between). I have a passion for embedded systems, and excel at diving deep into new technical topics.

SKILLS

- Experience working at all layers of the stack - from low-level microcontroller code, through kernel and BSP development to scalable cloud services.
- Passion for diving deep into new technical fields and becoming a subject-matter expert.
- Extensive JavaScript, Go, Java (Spring), C and C++ skills.
- Familiarity with hardware design, including PCB layout.

EDUCATION

University of Waterloo
Bachelor of Software Engineering
2015-2020

PROJECTS

- Reverse-engineering an alarm system to run my own custom software and re-use the hardware. Wrote a from-scratch IP stack to fit in minimal RAM.
- Rainwater irrigation system using industrial automation components (PLCs, contactors, pressure transducers, etc.)
- Custom home automation products of all kinds with ESP32/ESP8266 and Atmel microcontrollers.