Robert Zuchniak

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EDUCATION

Co-op Honours Bachelor of Computer Science *Sep. 2022 – April 2026*
University of Ottawa **CGPA: 9.85/10.0**

- Data Structures, Algorithms, Advanced C++, Operating Systems

PROFESSIONAL EXPERIENCE

Software Developer - Solace Agent Mesh Core AI Sep. 2025 – Dec. 2025
Solace *Kanata, ON*

- Architected a **Python logging infrastructure overhaul**, reducing log volume by **70%** and cutting **Datadog ingestion costs by 5%** through improved observability.
- Engineered **streamable-HTTP transport** for MCP servers, enabling real-time LLM tool-calling and increasing system usage by **15%**.
- Optimized **React Flow** architectures and patched production bugs involving **AWS S3** and **Google ADK**, ensuring reliable data retrieval for cross-cloud AI agents.

Software Developer Jan. 2025 – April 2025
DistillerSR Inc. *Kanata, ON*

- Led development of a node-based UI using **React Flow** and **GraphQL**, **reducing project setup time by 50%** for end-users via an intuitive visual logic builder.
- Scaled backend architecture to support **2 additional enterprise partnerships** by implementing modular multi-tenant features within **Laravel** and **MySQL**.

Quality Control Engineer May 2024 – Aug. 2024
DistillerSR Inc. *Kanata, ON*

- Automated **OWASP ZAP** security scans in CI/CD, increasing vulnerability detection by **100%** and securing data for 300+ global customers.
- Developed a **Cypress** regression suite in **JavaScript**, optimizing total test execution time by **10%** through strategic test parallelization.

PROJECTS

Synchronized Art Board: *React, TypeScript, PostgreSQL, Socket.IO*

- Architected real-time state synchronization (**sub-second latency**) for up to **10,000 concurrent active connections**.

3D Graphics Engine: *Rust, WGPU, Winit*

- Built a high-performance engine leveraging **WGPU API** with backface culling, resulting in a **200% increase in frame efficiency**.

Lox Interpreter: *Java*

- Engineered a **recursive-descent parser** and tree-walk interpreter featuring semantic analysis and dynamic typing.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Rust, Go, Java, C++, Python, PHP, SQL
Web: React, Next.js, GraphQL, Socket.IO, Laravel, SvelteKit, Three.js, Tailwind
Tools: Docker, AWS S3, Jenkins, Cypress, Bitbucket CI/CD, Git, PostgreSQL, Firebase

ACHIEVEMENTS

1st Place NASA SpaceApps, **1st Place** Hack the Hill, **1st Place** uOttaHack Solace Challenge.