

Ruel Nathaniel Alarcon

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EDUCATION

University of Saskatchewan

Saskatoon, SK

B.S. in Computer Science (Honours Software Engineering Stream), Minor in Math

Sep 2022 — Jun 2026

- Dean's List | Relevant Coursework: Operating Systems, Algorithm Analysis, Web Development, Computer Networking, AI
- Member of the Computer Science Student Society

TECHNICAL SKILLS

- **Languages:** JavaScript, TypeScript, C, Python, Java, Rust, PHP, Scala, Lua, SQL
- **Technologies:** Node.js, React, Svelte, Vue, Tauri, Electron, PostgreSQL, GraphQL
- **Tools:** Git, Linux, Docker, AWS, Jest, Cypress, Prometheus, Grafana, Jira, Asana, Postman

WORK EXPERIENCE

Software Developer

May 2023 — Present

Biktrix

Saskatoon, SK

- Developed Biktrix Nexus, a platform for scraping, storing, and analyzing sales data for all Biktrix points of sale including Shopify, Lightspeed, and Odoo simultaneously via their APIs
- Developed a multitude of backend tools including Shopify Apps for version control of product details with webhook (Slack message) integration, sharing carts between users, and managing Shopify webhooks
- Worked on a variety of modules for the Odoo ERP including backend and frontend code for generating product descriptions based on product specs with AI, and managing orders from Lightspeed POS

PROJECTS

Korewa.AI

- Developed an AI chatbot creation platform reaching 100,000 users and scaling to millions of messages, with visual sprites, semantic analysis, fine-tuned open-source LLMs for anime dialogue via cloud GPUs, and vector databases for RAG.

A+ Social Network

- Worked with a small team to develop a massively scalable and observable social network to aid students in course management, share grade calculation templates, and share insights on classes with others.

3cpf File Format and Software Suite

- Created a suite of software for working with 3cpf files, a file format I created for storing animated coloured point clouds. This includes: as2p (A Blender addon for exporting animated meshes to 3cpf files), cpf3d (An official Python package for reading, writing, and editing 3cpf files), mat3cpf (A CLI tool for visualizing 3cpf files), and more.

Desmos MIDI

- Developed a CLI tool and web app in Rust for recreating instruments from sine waves (additive synthesis) and converting MIDI music files to math equations that can be listened to in the Desmos Graphing Calculator.

Spellcast Solver CLI

- Developed a high-performance CLI tool in C to calculate the best moves in the word-search-similar game Spellcast, utilizing OpenMP parallelization for multi-core performance optimization.

ACCOMPLISHMENT HIGHLIGHTS

- **Participated in the Agtech Hackathon** hosted by Innovation Saskatchewan, collaborating within a 6-team cohort to develop a prototype and pitch a business concept
- **Invited speaker at the USask Cybersecurity Club**, presenting on weaknesses in pseudorandom number generators and advanced game exploitation, with a focus on practical applications in security and multiplayer game systems
- **Awarded Best Multiplayer Game at the SaskInteractive Game Jam** — co-developed a multiplayer game using JavaScript and TypeScript
- **Recipient of SaskTel scholarship & University of Saskatchewan Dean's List scholarships** for academic performance