

EDUCATION

University of Alberta | Bachelor of Science, Specialization in Computing Science

Sep 2022 – May 2026

Dean's Honor Roll (2x), Undergraduate Academic Scholarship (4x), Undergraduate Leadership Award (2x)

GPA: 3.60/4.00

Coursework: Software Engineering, Quality, Infrastructure & Testing, Compiler Design, Operating Systems, Advanced C & C++ Design, Distributed Systems, Rust Programming, Computer Architecture, Database Management, AI & ML Applications, Advanced Algorithms

EXPERIENCE

Software Engineer | People Inc.

Sep 2024 – Present

- Engineered a zero-config developer platform & **Deno CLI** ecosystem used by **500+** engineers, automating scaffolding, dependency updates, & provisioning; drove cross-team infra (secure dual-domain local dev, dedicated **LLM** DB clusters, automated API docs) to cut setup time by **90%**, reduce onboard time by **50%**, & eliminate environment drift. Authored onboarding course & mentored **3** new hires.
- Designed & implemented a managed database tooling layer for **Prisma ORM**, integrating secure credential vaults & supporting multi-tenant, multi-schema **PostgreSQL**. Cut DB connection errors by **95%** & accelerated production DB migrations by **10x**.
- Led development of an AI-powered survey & analytics platform (**Nuxt 3**, **Prisma**, **PostgreSQL**, **OpenAI**), delivering real-time analytics, dynamic question generation, & sentiment analysis. **3x** survey completion rates & adopted as the default by all product teams.
- Co-architected a modern design system in **Vue 3**, building **30+** reusable, accessible UI components & enforcing rigorous **QA/test automation**. Achieved **100%** adoption across new applications & a **3x** improvement in UI consistency.
- Modernized user management & access control by refactoring identity provider (**Keycloak**) integration, implementing robust group/role APIs, & delivering a full-featured admin UI. Enabled fine-grained permissions for **10,000+** users & increased platform uptime to **99.99%**.

Software Engineering Intern | People Inc.

Oct 2023 – Sep 2024

- Engineered bulk data processing & core backend infrastructure (**NestJS**, **TypeORM**, **PostgreSQL**, **GraphQL**, **Redis**, **Kibana**, **Elasticsearch**), delivering **JSON**-driven job orchestration, self-healing service registry flows, robust job-runner services, & real-time job history analytics powering **hundreds** of large-scale data jobs; achieved **99.999%** uptime & reduced operational incidents by **80%**.
- Migrated **5+** mission-critical applications from legacy **Vue 2** to **Vue 3**, refactoring component architecture, state management (**Pinia**), & build tooling. Enhanced performance with **Composition API**, improved type safety with **TypeScript**, & modernized routing patterns.
- Overhauled the company-wide design system, introducing auto-imported components, prop hygiene, & comprehensive **Storybook** documentation. Enabled **100%** cross-app reusability & a **20%** reduction in bundle size.
- Engineered & optimized **Docker** image scripts & **CI/CD** automation (**AWS**, **Jenkins**, **Kubernetes**, **Playwright**), ensuring seamless deployments, robust **QA** integration, & a **50%** reduction in build failures.

Lead Teaching Assistant - Software Engineering | University of Alberta

Sep 2023 – May 2026

- Designed advanced, industry-relevant programming assignments (**C**, **Java**, **Bash**, **Databases**, **Android**, **Git**) for **4000+** students.
- Built high-performance **Python/Shell** pipelines to automate grading & plagiarism checks, saving **1000+ hours** of manual work.
- Provided targeted debugging & personalized guidance, significantly improving student outcomes & problem-solving skills.

PROJECTS

Gazprea Language Compiler & Playground | C++, LLVM, MLIR, ANTLR4, TypeScript, Bun, Hono | <https://gazlab.onrender.com>

- Full-featured compiler for the **Gazprea** functional language: **7-stage MLIR-to-LLVM** IR pipeline, **-O3** optimizations, advanced type inference with **8+** analysis passes, qualifier-based promotion, & comprehensive error reporting. Front-end (**ANTLR4**) parses to AST; middle-end lowers through **MLIR** dialects with constant folding & dead-code elimination; backend emits **LLVM IR** for native targets.
- Interactive web playground (**Bun/Hono**, **Vite**, **TypeScript**) supports real-time compile-and-run, syntax highlighting, & output streaming; validated against **2000+** test cases covering generators, matrices, vectors, structs, & functional purity.

TrackIt Personal Finance App | Vue 3, TypeScript, ML, FastAPI, Docker, Tailwind, Google OAuth | <https://trackit-sigma-taupe.vercel.app>

- Personal finance platform with multi-account **CSV ingestion**, **duplicate detection**, & intelligent categorization (**ML sentence transformer** with **fuzzy matching**, **1000+** learned patterns) powering dashboards & **Chart.js** analytics.
- Secure multi-user isolation via **Google OAuth** & **JWT**-protected APIs; **Docker Compose** stack delivering **<100ms** API responses & **<10ms** categorization latency.

Distributed Multi-Player Poker System | Rust, Axum, PostgreSQL, SeaORM, Vue 3, Deno | <https://chip-happens-j41l.onrender.com>

- Designed an **event-driven** real-time networked distributed multiplayer game backend: per-table **WebSocket actor** with a **finite-state machine** (ready → deal → betting → draw → showdown), typed message protocol, and broadcast fanout; enforced correctness invariants (no join/leave mid-hand) for **2–5** player tables + spectators.
- Implemented session-based auth (**argon2** password hashing), table/bank/stats **REST** APIs, and a dual-ledger bank↔chips model; persisted to **PostgreSQL** via **SeaORM**, and shipped a **Docker Compose** deploy with a **Vue 3** SPA + interactive **Deno CLI**.