MARK AXELUS

mrkaxelus@gmail.com | (+1) 780-607-2323 | markaxelus.com | LinkedIn | GitHub | Victoria, BC

EDUCATION

University of Victoria   **Dec 2026**
B.S. in Computer Science with Software Systems Options   *Victoria, BC*
Relevant Courses: Machine Learning, Data Structures & Algorithms, Operating Systems, OOP

TECHNICAL SKILLS

Languages & Frameworks: Python · Java · JavaScript · TypeScript · R · SQL · React.js · Next.js · Node.js · Express.js
Tools & Platforms: Git · Jenkins · Jira · Postman · Jupyter · Figma · REST APIs · Jest · Cypress · Selenium · Redux
Data & Cloud: AWS (S3, Lambda, Route 53) · PostgreSQL · MongoDB · Prisma · Pandas/NumPy · PyTorch · Power BI

PROJECTS & TECHNICAL EXPERIENCES

Full-Stack & System Design | Next.js, TypeScript, TailwindCSS, Redux, Node.js, PostgreSQL, AWS   **Jun 2025 - Present**
Relay – Personal Project Management App | Github   *Victoria, BC*
- **Built responsive UI with real-time** task, status, and comment updates using Redux Toolkit sockets and RTK Query.
- **Designed and tested scalable REST API** with Express.js and Prisma; checked API responsiveness under mocked task loads and concurrent API access during development.
- **Integrating AWS Cognito auth** with OWASP ZAP scans for high-severity issues report.

Full-Stack & UX Development | Next.js, TypeScript, Motion, TailwindCSS, Redis   **June 2025**
Personal Portfolio Project | Github, markaxelus.com   *Victoria, BC*
- **Designed and built a responsive, SEO-conscious** personal portfolio with smooth scroll-triggered transitions and intuitive project navigation to **optimize UX**.
- **Engineered a modular, scalable codebase** with reusable UI components, including 5+ custom animations components.
- **Integrated API routes** to handle contact form submissions, visit tracking, and on-demand resume downloads.

Requirements Engineering   **Jan 2025 - Apr 2025**
Coursework | Github   *Victoria, BC*
- Collaborated in a cross-functional team of **8** to produce a comprehensive **85+ page system specification** outlining a **full cycle SDLC** of an end-to-end university chatbot assistant.
- **Drove full RE lifecycle** by coordinating team efforts across: **elicitation, analysis, specification, and validation**.
- **Co-authored 60+ artifacts** including user stories, use-case diagram, domain model, database schemas, low/high fidelity prototypes, and risk-value roadmap, all with **full traceability to BDD acceptance test.**

Full-Stack & System Design | TypeScript, Mermaid.js, Serverless, AWS, LangChain, OpenAI   **Jan 2025**
Synapse - Hackathon | Github   *Vancouver, BC*
- Built a TypeScript UI that converts uploaded PDFs into live, code-editable mermaid diagrams with FastAPI; **handles 10MB files in < 5s on Lambda 512MB.**
- **Orchestrated API Gateway**, configured Lambda for seamless live demo execution without cold-start delays.
- **Linked GPT-4 via LangChain** to extract entities/relations, auto-creating Mermaid.js diagram code and summaries.

CLUB EXPERIENCES

UVIC Environmental Engineering Club | Next.js, TypeScript, TailwindCSS, C, STM32, RTOS   **Jan 2024 - Sep 2024**
UVEEC – UVIC Environmental Engineering Club | Github, uveec.ca   *Victoria, BC*
- **Developed 12+ reusable React components** to streamline future development and scalability; **fixed** existing dark-mode banner bugs that previously disrupted readability and contrast on key pages.
- **Implemented C communication logic** for a sea-glider prototype on an STM32 MCU; FreeRTOS to keep sensor polling and motor control modules independent and latency-predictable.

Software Testing | Java, JUnit, Gradle, Selenium, Cypress   **Jan 2025 - Apr 2025**
Coursework   *Victoria, BC*

- **Developed** unit, integration, black, and white-box tests for large systems: game logic, databases, and UI components.
- **Applied Test-Driven Development** to build reliable and maintainable programs; **iterated on coverage and feedback**.
- Collaborated in a cross functional team of **4** to **design and execute test plans** aligned with requirements.

Operating Systems | C, Shell, Concurrency, File Systems   **Jan 2025 - Apr 2025**
Coursework   *Victoria, BC*

- **Built a custom shell in C** with process management, piping, and file redirection.
- **Developed multithreaded programs** simulating disk I/O and train scheduling; implemented resource control and deadlock prevention.
- **Explored kernel-level scheduling**, memory protection, and real-world OS constraints through labs and assignments.

Digital Logic & Computer Organization | Hardware Design, HDL, Embedded Concepts   **Sep 2024 - Dec 2024**
Coursework   *Victoria, BC*

- **Designed and simulated** digital circuits using Hardware Description Languages (HDL) and finite state machines.
- **Studied & built simple CPU architecture**, memory organization, and embedded system design with a structured logic methodology.
- **Applied** concepts in labs using logic gates, combinational/sequential circuits, and CAD tools.

Back-end Development | MERN, bcrypt, JWT, Cookies, TailwindCSS   **May 2024**
BasicAuth – Personal Authentication App Project | [*Github*](Github)   *Victoria, BC*

- Implemented sign-up/login, token refresh, and role checks; **packaged as modular logic for future use**.
- Built a **responsive UI** using HTML5, CSS, and JavaScript; integrated with the MERN stack.
- **Secured credentials** with bcrypt hashing and HTTP-only SameSite cookies; **passes OWASP test suite.**

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PROJECT EXPERIENCES

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Full-Stack Development & Design | Next.js, TypeScript, Motion, TailwindCSS, Redis   **June 2025**
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