Abdullah Khan

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Education

University of Waterloo — Waterloo, ON
Bachelor of Computer Science (BCS) — *Expected 2029*
- Relevant Coursework: Algorithm Design & Data Abstraction, Functional Programming, Software Development Tools

Wilfrid Laurier University (Double Degree) — Waterloo, ON
Bachelor of Business Administration (BBA) — *Expected 2029*
- Relevant Coursework: Business Strategy, Understanding Business Environment, Microeconomics and Macroeconomics

Experience

Software Developer — Milton, ON
PixelsBoost — *Feb. 2025 – July 2025*
- Developed **5** responsive websites for small business clients using **React**, **HTML/CSS**, and **JavaScript**, implementing features like contact forms, image galleries, and navigation menus across different screen sizes.
- Integrated third-party services including **Stripe** for payment processing, **Google Maps API** for location displays, and **SendGrid** for contact form emails, testing functionality across multiple client projects.
- Optimized website performance by compressing images to **WebP format**, implementing lazy loading for below-the-fold content, and using **Cloudflare CDN**; improved average **Lighthouse** scores from **70 to 85**.

Software Engineering Intern — Missouri, USA (Remote)
Fast Webs — *May 2024 – Aug. 2024*
- Contributed to **3** web applications using **React** and **Node.js**, building UI components for checkout pages, user dashboards, and admin panels.
- Implemented event tracking functionality using **JavaScript** to log user interactions (clicks, form submissions, page views) and store data in **PostgreSQL** database for product team analysis.
- Improved page load times by implementing code splitting and lazy loading, using browser developer tools to measure performance improvements.

Projects

Attack Surface Growth Simulator (ASGS) | *Python, React, FastAPI, SQLAlchemy, NumPy, SQLite, Recharts, Pydantic*
- Built full-stack security risk modeling tool that calculates attack surface scores (**0-100**) across **5** threat categories by normalizing system metrics (endpoints, users, MFA adoption, vulnerabilities) and generating ranked driver breakdowns with actionable security recommendations.
- Developed **FastAPI** backend with **Pydantic** validation that computes quadratic risk functions and calculates first/second derivatives using **NumPy** to identify unsafe growth zones where system complexity creates disproportionate security exposure.
- Designed **SQLite** database with **SQLAlchemy** ORM to persist assessment configurations and results, enabling users to compare different security scenarios and track how architectural changes impact overall risk posture.
- Built interactive **React** dashboard with **Recharts** that visualizes risk curves, growth rates, and danger zones in real-time as users adjust system parameters, helping teams identify critical inflection points before scaling.

AutoForm (Spur Hackathon) | *React, Node.js, OpenRouter API, pdf-lib, JavaScript*
- Built PDF auto-fill application that extracts user profile data and programmatically populates common forms using **OpenRouter API** for intelligent field mapping and **pdf-lib** for PDF manipulation.
- Implemented support for **5+** form types including T4 tax forms, rental applications, and visa documents; tested field mapping across PDFs with varying layouts and field structures.
- Added error handling for missing form fields, API rate limits, and malformed PDF structure; displays field-level status indicators (completed/failed/skipped) with specific error messages.

Technical Skills

Languages: Python, JavaScript, TypeScript, Java, SQL, C/C++, Racket
Technologies: Git/GitHub, Linux/Unix, PostgreSQL, REST APIs, Pandas, NumPy, Microsoft Office, Power BI, Tableau
Web Development: React, Node.js, Express.js, FastAPI, Tailwind CSS, Material UI