

# Karam Danial

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## EDUCATION

*University of Waterloo* | **BASc. Biomedical Engineering – Computing Option**

Sep. 2017 – Jun. 2022

- Graduated with distinction (3.9/4.0 GPA, Dean's Honour List).
- Data Structures and Algorithms, Systems Programming and Concurrency, Image Processing and ML, Introduction to AI.

## SKILLS

- **Languages:** Python, C, C++, Rust, C#, SQL, Java, React, Node.js, HTML, CSS, GraphQL, Puppet, Scala, Docker
- **Skills:** Backend Software, Systems Design, Data Models, ETL Pipelines, UI, OOP, Observability, Scalability, DevOps
- **Tools:** Version Control, GitHub, AWS, Azure Cloud, Git, Jira, Minikube (Kubernetes), MongoDB, CI/CD, Testing

## WORK EXPERIENCE

*Qualcomm* | **Software Engineer**

Sep. 2022 – Jan. 2024

- Enabled inter-process communication **API** in **C**, allowing embedded subsystems developed by cross-functional teams to share data with 60% less memory.
- Deployed containerized C applications using **EDKII** and **UEFI** to onboard driver APIs on client hardware without HLOS interference, expediting the testing process by 20%.
- Spearheaded department-wide **Linux** device tree configuration endeavor, which facilitated hardware values modification at run-time and decreased testing time by 40%.
- Decentralized driver-testing software from processor build to **Docker** containers, enabling software services to run securely on flexible container configurations.

*Ontario Die* | **Backend System Developer – Intern**

May 2021 – Jun. 2021

- Charted and programmed HMI application features in **C#** using **MVC** to automate metal die formation with a robotic machine, which saved 30 hours of physical labor every week.
- Reorganized table schema for relational databases using **SQL** and **SSMS** to log over 100,000 machine-automated jobs in greater detail for more efficient query times.
- Coordinated a team of 4 engineers as scrum master for one month, managing agile development with Jira and Azure **CI/CD** pipelines while improving task throughput by 20%.

*Hitplay* | **Backend Software Developer – Intern**

Jan. 2021 – Apr. 2021

- Orchestrated back-end development of an end-to-end, **ETL** observability feature using **Node.js**, **Postgres**, **React**, and **RESTful** API to improve IoT data visualization on user dashboards by 20%.
- Generated automated integration tests to ensure endpoint functionality and data transfer while preventing regressions.
- Streamlined **AWS** serverless microservices and **Lambda** functions to process and store client information in DynamoDB and S3 Buckets, decreasing IT service time to diagnose by 90%.
- Implemented processor code in **C#** to support hardware **JSON** data streaming to AWS for over 30 international clients, enabling edge computing infrastructure.

*eBusiness Solutions* | **Full Stack Developer – Intern**

May 2020 – Aug. 2020

- Leveraged **Flutter** and **MongoDB** to program a cross-platform, native mobile app generating client-specific UI and decreasing tailored development time by 65% over time while encrypting user information.
- Integrated web browser text editor using **HTML**, **CSS**, and **JavaScript**, authorizing clients to specify the application's UI using **XML**. Stored scaffold data in a **NoSQL** database, which decreased application load time by 20%.

## PROJECTS & INTERESTS (Hyperlinked)

- Performance Programming – Optimized and parallelized **Rust** program behavior with **flame graphs**, **valgrind**, **helgrind**.
- Image Processing CLI – Deployed a **Rust** CLI application for users to modify images in the digital and frequency domain.
- Data Structures and Algorithms Catalogue – Concocted a collection of LeetCode solutions in **C++**, **Python**, and **Rust**.
- GraphQL.js – Transcribed **GraphQL** queries to SQL queries to help engineers seamlessly use both query languages.
- AI Classifiers – Devised **Python** classifiers to label data points based on statistical features and supervised learning.
- Interests – Guitar, Latte Art, Astrophotography, BJJ