




# Abdul Rafay Khurram

 <https://www.abdulkhurram.com>

 +1 (236) 865-4820

 rafay@abdulkhurram.com

 [github.com/arkb75](https://github.com/arkb75)

 [linkedin.com/in/abdulkhurram](https://linkedin.com/in/abdulkhurram)

## Relevant Experience

### Software Developer

UBC Emerging Media Lab

Vancouver, BC, Canada

Sept. 2024 - Present

- Leading a team in the development of a VR application using Unreal Engine to enhance nursing education, focusing on interactive clinical simulations and AI technologies.
- Reduced backend infrastructure costs by 90% through optimization of the AI system on the DXL server.
- Developing a secondary AI layer to monitor and re-prompt AI responses, aiming to improve system robustness, increase scalability, and reduce development time.
- Driving prompt engineering efforts to enhance the reliability and efficiency of AI-based outputs.

### Software Engineer

Faaz Consulting

Maryland, USA

May - Sept. 2023

- Led the development of client applications in Java and Python, improving UI responsiveness by 30%.
- Enhanced legacy systems with new UI features using Vue.js and JavaScript, increasing user engagement by 15%.
- Automated DevOps processes with Jenkins and Docker, reducing deployment times by 20%.
- Delivered software enhancements for enterprise clients, adhering to strict deadlines and project specifications.

## Relevant Technical Projects

### High-Performance Media Distribution Platform

Personal Project

Jan. - April 2021

- Orchestrated Ombi-integrated media server, automating over 1,000 weekly metadata-rich downloads using scripting.
- Administered NGINX server streaming a 50 TB digital Blu-ray archive to 150+ users, ensuring optimal system reliability.
- Enhanced system resilience and reduced downtime by 90% with SSH-powered Raspberry Pi commands.

### Smart Mirror

Personal Project

Jan. - May 2019

- Designed and built a smart mirror using Raspberry Pi 3 and MagicMirror<sup>2</sup> framework, integrating real-time data feeds such as weather, news, and calendar updates.
- Customized the UI using HTML/CSS and integrated API calls with JavaScript for real-time data fetching and interaction.
- Developed voice control functionality with Python scripts, improving user experience and accessibility.
- Reduced boot-up times by 30% through optimization of system processes using systemd and automation techniques.

## Research

### Entropy Comparison in Random Generators

Research Project

Sept. - Dec. 2020

- Conducted a comprehensive analysis comparing the entropy levels of true-random vs. pseudo-random number generators, utilizing mathematical algorithms and hardware-based phenomena.
- Developed and executed tests in Java, C++, and Swift, measuring performance and entropy using TRNGs (True-Random Number Generators) and PRNGs (Pseudo-Random Number Generators).
- Demonstrated TRNGs' superiority for cryptographic purposes, resulting in more secure and unpredictable sequences compared to PRNGs.
- Published results in a detailed research paper, contributing to the understanding of secure random number generation.

## Skills

**Languages:** Java, Python, JavaScript, C/C++, HTML/CSS, Swift | **Frameworks:** Vue.js, Express.js, Node.js, React.js

**Tools:** Git, Raspberry Pi, Linux, System Administration, 3D Printing, UI/UX Design

**API and Integration:** API Integration, Systemd | **Testing:** Unit, Integration, End-to-End, Smoke, A/B

## Education

The University of British Columbia (BSc in Computer Science - Expected Graduation: 2026)

Vancouver, BC

UBC Science Co-op



[science.coop@ubc.ca](mailto:science.coop@ubc.ca) | 604-822-9677