Abdul Rafay Khurram

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Relevant Experience

Software Developer **Vancouver, BC, Canada**
UBC Emerging Media Lab *Sept. 2024 – Present*

- Leading a team to develop an AI-powered VR platform for the UBC School of Nursing, integrating Large Language Models (LLMs) and Unreal Engine to simulate real-time clinical scenarios.
- Building a secondary AI layer to monitor and adjust patient responses, ensuring accuracy and improving system stability.
- Delivered a prototype in two weeks, showcasing realistic patient dialogues and securing further project funding.
- Optimizing LLM-driven patient behavior for more human-like interactions, enhancing the platform's educational impact.
- Cut backend costs by 90% through AI optimizations on the DXL server, improving system performance by 40%.

Software Engineer **Maryland, USA**
Faaz Consulting *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 MagicMirror² 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**