Kumar Varenya

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ORCiD | Linkedin | Github

Education

University of British Columbia **Vancouver, BC**
Bachelor of Applied Science in Computer Engineering *May 2027*

Experience

University of British Columbia IT – Audio Visual **Vancouver, BC**
Learning Space Steward (Work Learn) *2024 – 2025*

- Supported 300+ learning spaces, troubleshooting technical issues, ensuring seamless operations, and minimizing disruptions during lecture and events
- Led system upgrades, hardware replacements, and break/fix processes, coordinating with internal teams to improve AV/IT functionality and reliability
- Managed AV networks, device replacements, firmware updates, and live testing to optimize system performance and user accessibility

Oil and Natural Gas Corporation **New Delhi, IN**
Software Engineer Intern *Summer 2024*

- Developed and optimized SQL scripts to automate report generation, data extraction, and large dataset queries, improving system efficiency by 15% and reducing manual reporting time by 30%.
- Visualized and distributed daily QA test reports, enhancing transparency and improving communication between QA and development teams
- Integrated sensor data APIs and implemented unit testing for geological monitoring tools; documented testing workflows to improve script maintainability for future team members.

Software Engineer Intern *Summer 2023*

- Designed and maintained internal web tools to streamline geological data visualization workflows, improving cross-departmental access to field data and accelerating analysis turnaround by 25%
- Assisted in the design of a database system to track over 1,000 equipment inspections and maintenance schedules, improving data integrity and reducing scheduling conflicts
- Supported the implementation of GIS mapping tools for resource allocation and logistics, enabling more efficient routing and coordination of field operations

Freelance/Self–Employed **Remote**
Private Tutor (Physics and Math) *2022 – 2024*

- Provided one-on-one tutoring for high school students, helping them improve grades by an average of 10-15% through personalized lesson plans and problem-solving techniques.
- Adapted teaching strategies to accommodate different learning styles, ensuring clear communication and a positive learning environment
- Created custom study materials, including practice problems and summaries, to reinforce concepts and boost retention

Research Experience

Tokyo Institute of Technology **Remote**
Indian Delegate, Sakura Science Plan (Collaborative Research Activities Course) *December 2020*

- Coordinated a 8-person team to develop a fiducial-marker-based localization model for an unstable camera feed.
- Optimized the localization model using V-rep for real-time camera feeds, achieved a calibration error of $\leq 0.5\%$.
- Orchestrated design, combined rule-based script and rigorous unit testing to validate auto-evaluators with 95% coverage

Toyohashi University of Technology **Remote**
Indian Delegate, Sakura Science Plan (Collaborative Research Activities Course) *November 2020*

- Coordinated a 4-member team in developing a versatile, multi-tasking robot from inception to completion.
- Optimized pathfinding (A* & Dijkstra) algorithm, reduced execution time by 22%, facilitating swifter navigation.
- Integrated IR, proximity sensors, encoder motors, and servos for enhanced perception and seamless autonomy.

Projects

Generic Summer Project 2 | *Generic, Generic++* **Summer 2025**

- Developed a full-stack web application using with Flask serving a REST API with React as the frontend

Project 1 | *Check jake resume for stack* **Summer 2025**

- Developed a Minecraft server plugin to entertain kids during free time for a previous job

Technical Skills

Languages: C/C++, Java, Python, R, SQL, HTML/CSS, MATLAB, Lua, x86 Assembly
Frameworks & Libraries: Flask, TensorFlow, NumPy, Pandas, JUnit, Swing, JavaFX
Tools & Platforms: Git, Bash & Shell, Valgrind, SAP, SAP Lumira, Arduino, Raspberry Pi, SolidWorks