

Arsheya Raj

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EDUCATION

University of Washington – School of STEM (Bothell)	Bothell, WA
Master of Science in Computer Science and Software Engineering (GPA: 3.9/4.0)	August 2024
Birla Institute of Technology Mesra	Ranchi, India
Bachelor of Engineering in Information Technology (GPA: 3.82/4.0 (WES ICAP))	June 2018

TECHNICAL SKILLS

<i>Programming Languages:</i>	C/C++, SQL/PostgreSQL, Python, JavaScript, Java, C#, Shell Scripting, Swift
<i>Cloud Computing Platforms:</i>	Amazon Web Services (AWS), Google Cloud Platform (GCP)
<i>Certifications:</i>	Google Cloud Certified - Digital Leader Developer (Credential ID 61832205) [Nov 2022 - Nov2025]
<i>Achievements:</i>	Qualified for ACM ICPC Onsite Round and Google Code Jam in 2016 and 2017 , Participated in SnackDown 2016, 2017, and 2021 conducted by Codechef. Qualified RMO (Regional Mathematical Olympiad) 2013 and participated in INMO (Indian National Mathematical Olympiad) 2014 .
<i>Technical Skills:</i>	NVIDIA CUDA, OpenCV, React Native, React.js, Cloud Computing, Mobile Computing, Unity, Matlab, Big Data Concepts, Data Analysis.

EXPERIENCE

Chief Technology Officer - Vaccine Genie, Community Family and Internal Medicine	Nov 2024 - Present
<ul style="list-style-type: none">Defined the technology roadmap and led full-stack development using React Native, Google Cloud APIs, Gemini AI, microservices, and healthcare standards (FHIR, HL7) to enhance vaccination record management.Achievements: Winner – Sacia Digital Health Challenge 2023, University of Washington. Participant – Hollomon Health Innovation Challenge 2024 and 2025, Attended CES 2025.	
CSS Grader and Peer Facilitator (Teaching Assistant) , University of Washington Bothell	
<ul style="list-style-type: none">Taught and supported 40+ students in Database Systems (CSS 475) and Operating Systems (CSS 430 A), facilitating their understanding of key concepts. Additionally, guided 20+ students in High-Performance Computing (CSS 535), focusing on advanced GPU and CUDA programming.	
Freelance App Developer / React Native Developer , Self-Employed	April 2020 - April 2022
<ul style="list-style-type: none">Developed Android and iOS applications using React Native, JavaScript, and Google Cloud Platform, incorporating features like video conferencing, content sharing, and quiz portals.Managed alpha, beta, and closed testing phases, and diagnosed and fixed 10 critical bugs in a client's quiz-portal React Native app.Contributed to the creation of 6 system design specifications for client web and native applications.	
Business Technology Analyst , ZS Associates	May 2018 - September 2019
<ul style="list-style-type: none">Contributed to developing automated and scalable solutions for risk-based pricing models, helping a pharmaceutical client optimize profitability and decision-making.Contributed to 3 releases, optimizing backend processes and automating ETL (5% runtime reduction) on AWS.Integrated data from multiple sources into Reltio MDM using Node.js and Java.	

TECHNICAL PROJECTS/THESIS

[Master's Thesis] Innovative Rehabilitation Approach for Upper Limb Neurologic Conditions Using Mixed-Reality Simulation and EEG/EMG Biofeedback	
<ul style="list-style-type: none">My research focused on developing an AR/MR rehabilitation environment for stroke patients, using EEG & EMG data processed in MATLAB by machine learning models (CNN, FNN, RNN, SVM, and LSTM) for motor task classification in PyTorch and Tensorflow, as part of the "Smart NeuroRehab Ecosystem."	
[Course Project] CUDA-Accelerated K-Means , HPC	Winter 2023
<ul style="list-style-type: none">Implemented an efficient k-means clustering algorithm using CUDA, leveraging GPU's parallel processing capabilities with various thread and block configurations to handle datasets of up to one million data points in a 2D space (x and y axes).	
[Course Project] Enhanced Vocabulary Trees for Real-Time Object Recognition in Image and Video Streams , Advanced Topics in Computer Vision	Spring 2023
<ul style="list-style-type: none">Implemented scalable image recognition using Vocabulary Tree-inspired hierarchical k-means clustering and feature detectors (SIFT, ORB, AKAZE, and BRISK.)	
[Project] Real-time Particle Simulation with CUDA	April 2025
<ul style="list-style-type: none">Developed a system that uses CUDA to accelerate the simulation of particle systems. This enables real-time visualization and analysis of complex fluid dynamics or physics simulations on local hardware.	