VARAD PARADKAR

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Education

University of North Carolina at Charlotte, Charlotte, NC May 2026
Master of Science in Computer Science
Savitribai Phule Pune University, Pune, India June 2022
Bachelor of Engineering in Computer Engineering

Technical Skills

- **Languages:** Python, C#, C++, Java, JavaScript (React, Node, Express), GLSL, Kotlin
- **Frameworks & Tools:** PyTorch, Unity3D, Unreal Engine, WebGL, PostgreSQL, MongoDB, React, Docker, Git
- **Machine Learning:** Deep Learning, CNNs, GNNs, VAEs, GANs, NeRF, 3D Gaussian Splatting, Transformers

Research

Graphic-driven Human Activity Reconstruction from mmWave Radar Dec 2024 – May 2025
Technologies: PyTorch, SMPL, 3D Gaussian Splatting (3DGS), Triplane Encoders, mmWave Signal Processing

- Adapted Apple's ML-HUGS framework to ingest mmWave radar data for human reconstruction using differentiable 3D Gaussian Splatting.
- Designed a custom single-channel signal rendering pipeline by replacing RGB SH projection with signal-intensity supervision and optimizing triplane encoders.
- Built a wireless-aware loss function for mmWave signal prediction, enabling robust training without image supervision.

Experience

Software Engineer - Data Platform — Montezuma AI August 2023 – May 2024
Project: PCMC Smart City Data Intelligence System
Technologies: Python, PostgreSQL, Power BI, Tableau, Azure, Node.js, Apache Airflow, REST APIs, React

- Planning and deployment of scalable ETL pipelines to process 10TB+ of municipal and environment data.
- Reduced data-processing cycle time by 40% via REST API integration and cross-department workflow redesign.
- Established project governance through automated metrics dashboards (Power BI/Tableau), boosting city planning transparency by 80%.
- Collaborated across data science, IT, and civic planning teams to align KPIs and enforce compliance (GDPR, emissions reporting).

Software Engineer Lead — Jnana Prabodhini June 2022 – December 2022
Projects: Aranya (AR Forest Simulation), Prabodh VR Lab (Educational Lab)
Technologies: Unity3D, C#, Git, ARCore, Jira, Google Play Console, Trello, Blender

- Directed end-to-end delivery of two immersive education apps, ensuring delivery ahead of schedule via agile sprints.
- Developed interactive environmental simulations (forest, weather) in *Aranya*, improving ecological learning outcomes.
- Coordinated with stakeholders, designers, and developers; maintained product vision and backlog in Jira.

Software Engineer Intern — Jnana Prabodhini January 2019 – June 2022
Projects: Megh (AR Weather Education), Sarita (River Ecosystem Simulation)
Technologies: Unity3D, C#, Git, AR Foundation, OpenGL, Photoshop

- Led agile development as scrum master and developer for two AR education apps (*Megh*, *Sarita*) achieving 50K+ downloads and a 4.5/5 rating.
- Optimized AR tracking and sprite-based ecosystems, improving accuracy by 95% and performance by 40%.
- Co-authored and published research in IJARSCT: *"Megh and Sarita – Educational App Development"*.

Projects

Smart City Resource Tracker (ETL + Dashboard) — Montezuma AI August 2023 – May 2024

- Developed visual analytics dashboards for emissions trend detection and predictive insights.
- Built modular PostgreSQL-Apache Airflow pipeline to track municipal utility usage and waste patterns.

Aranya — Jnana Prabodhini June 2022 – January 2023

- Led Unity3D AR game development, optimizing assets and maintaining 60 FPS for an immersive forest simulation.
- Integrated fauna behavior and interactive environmental mechanics, enhancing STEM learning for middle school students.

Prabodh VR Lab— Jnana Prabodhini June 2022 – January 2023

- Developed and deployed VR-based chemistry lab in Unity3D, optimizing for *Oculus (Meta Store)*.
- Delivered early using agile sprints, refining physics-based reactions for interactive learning.