Yashwanth Raj Tirupati

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SUMMARY

Results-driven AI and Computer Vision Engineer with an M.S. in Computer Science and expertise in developing and deploying deep learning models for AR/VR. Proficient in C++ and Python with a strong background in PyTorch, developing novel algorithms, and optimizing on-device performance to improve model accuracy and system latency.

EDUCATION

University of Dayton **Dayton, Ohio, USA**

M.S. in Computer Science *Aug 2023 - May 2025*

- **Concentrations:** Autonomous Systems and Data Science
- **GPA:** 3.41/4.00
- **Related Coursework:** Data Structures & Algorithms, Objects & Design, Virtual Reality, Machine Learning, Artificial Intelligence, Object-Oriented Programming, Algorithm Design, Advanced Computer Vision.

Jawaharlal Nehru Technological University **Hyderabad, Telangana, India**

B.Tech. in Computer Science & Engineering *June 2018 - July 2022*

- **CGPA:** 7.3/10.00
- **Related Coursework:** Operating Systems, Database Management Systems, Computer Networks, Discrete Mathematics, Web Technologies, Software Engineering.

EXPERIENCE

Cognizant Technology Solutions **Chennai, Tamil Nadu, India**

Software Developer *March 2023 - Aug 2023*

- Developed and deployed full-stack features for enterprise-level systems using Spring Boot (Java) and modern front-end frameworks, focusing on writing extensible, maintainable, and high-quality code.
- Partnered with product stakeholders to translate user requirements into technical specifications and collaborated within an Agile team to deliver robust solutions, improving API response times by 15%.

Cognizant Technology Solutions **Chennai, Tamil Nadu, India**

Programmer Analyst Intern *March 2022-Sept 2022*

- Contributed to the full software development lifecycle by identifying and fixing bugs in enterprise applications, leading to a 10% reduction in reported issues for key modules.
- Authored technical documentation and augmented test automation to improve code quality and reliability.

PROJECTS

Real-time Hand Tracking & Gesture Recognition for AR — University Project *Jan 2024-May 2025*

- Developed a novel deep learning model in C++ and PyTorch for high-fidelity hand tracking in a simulated AR environment, achieving 98.5% tracking accuracy on a custom dataset of 50 complex gestures.
- Engineered a lightweight architecture and implemented a data augmentation pipeline, reducing latency by 30% and increasing model robustness by 25% to enable 90 FPS on-device performance.

On-Device 3D Scene Reconstruction for VR — Personal Project *Jun 2024 - Present*

- Architected a complete 3D reconstruction pipeline in Python and created a custom SLAM algorithm that decreased tracking drift by 40% compared to baseline methods for large-scale environments.
- Optimized the entire system for resource-constrained mobile hardware, achieving a 2.5x speedup in mesh generation and enabling interactive on-device performance.

Semantic Segmentation for Dynamic AR Occlusion — Personal Project *Sep 2023-Dec 2023*

- Trained a PyTorch semantic segmentation model for realistic AR occlusion, achieving 92% mloU.
- Designed a distributed training process using Kubernetes that accelerated model experimentation and hyperparameter tuning by 5x.

ACTIVITIES AND LEADERSHIP

University of Dayton **Dayton, Ohio, USA**

- Teaching Assitant, CPS 501 (Advanced Programming and Data Structures) *Jan 2024-Apr 2024*
- Secretary, Indian Student Association (100+ members) *Aug 2023-Apr 2024*

Skills

Languages: Python, Java, C++, C, JavaScript, Kotlin
Frontend: HTML, CSS, ReactJS, AJAX
Backend Frameworks: SpringBoot, NodeJS
Database: MySQL, MongoDB, Postgres
Automation: Appium, Selenium, Cucumber BDD, Jenkins, JUnit
AI & ML: PyTorch, TensorFlow, Jupyter, OpenCV, LLMs(GPT)