Srija Madarapu

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SUMMARY

Computer Science graduate with 2+ years in enterprise software development, specializing in system-level design, process optimization, RPA, 3D systems, and computer vision research. Skilled in technical documentation, cross-team collaboration, and applying emerging technologies to enhance performance and scalability.

EDUCATION

University of Southern California **Jun 2023 - May 2025**
Master of Science Computer Science(Multimedia & Creative Technologies)

Kakatiya Institute of Technology & Science **Aug 2016 - May 2020**
Bachelor of Technology, Information Technology

SKILLS

Programming Languages: C++, Python, Java, JavaScript, C#,TypeScript, GLSL/HLSL, OpenGL
Web & Application Technologies: .NET, REST APIs, WebGL, ROS, React, FastAPI, WebSocket APIs, HTML, CSS
Automation & RPA: UiPath, RPA, Process Automation, AI Automation, Multi-Agent Systems (MAS)
Computer Vision & AI: OpenCV, Object Detection, Image Classification, PyTorch, TensorFlow, MediaPipe
3D Graphics & XR: Blender 3D, Unity, Unreal, Maya, TouchDesigner, Particle System, IK/FK, ARCore, ARKit, MRTK
Databases , Tools & Practices : MySQL, Microsoft Office, VS Code, MATLAB, MCP, Git, Agile, CI/CD

EXPERIENCE

University of Southern California*(Research Assistant – Multi-Domain Immersive Systems)* **Aug 2025 - Present**
Developing an experimental system for multi-domain immersive experiences across VR/AR mobile platforms. Building cross-device XR interactions using Unity, C#, OpenXR, and real-time rendering pipelines. Integrating computer vision signals and sensor data to enable adaptive immersive environments.

KINTSUGI GLOBAL INC*(3D Character Animation)* **Jun 2024 - Sep 2024**
Engineered 3D chatbot avatar character meeting 100% of client specifications, resulting in 40% increased user engagement Collaborated with a 5-person cross-functional team and documented system architecture for hand-off and future scalability. Implemented advanced animation techniques and seamless platform integration, optimizing user experience and decreasing

TATA Consultancy Services*(Software Engineer/Developer)* **Sep 2020 - Dec 2022**
Designed and implemented automation for 90+ critical SAP processes using UiPath, reducing manual errors by 65% Developed an intelligent health-check BOT that cut process time from 4 hours to 1.5 hours. Automated 50+ BASIS and 40+ functional checkouts across 8 global regions. Collaborated directly with C-level executives to identify and automate key business processes.

PROJECTS

Computer Vision: Feature Matching, 3D Reconstruction, & Object Detection
Implemented RANSAC, SIFT, SFM, Gaussian Splatting, and adversarial-robust models, achieving 95% feature matching accuracy, 40% faster 3D reconstruction, and +18% classification accuracy. Built RCNN/DETR pipelines processing 1000+ images with 52% mAP and improved model security by 25%.

Game Engine Enhancements
Built dynamic AI-driven NPC systems, advanced collision detection, and frustum-based optimizations boosting immersion by 45% and FPS by 30%. Enhanced environmental effects with realistic lighting, reducing rendering overhead by 35%.

Realistic 3D Rendering System
Developed a full rasterization pipeline with custom Scanline Algorithm and integrated Flat, Phong, and Gouraud shading for photorealistic results. Added anti-aliasing (+40% quality), stereo rendering, ray tracing, and simplex-noise effects.

Computer Animation and Simulation
Built a complete C/C++ OpenGL animation framework with rigging, IK, and real-time cloth/rigid-body simulations for 5000+ particles. Integrated keyframe and motion-capture systems achieving 95% accurate character motion and 50% faster setup.

Robotic Hand Path Planning
Engineered 6-DOF robotic arm mechanics with real-time visualization and 360° workspace analysis. Implemented Kalman filtering and RRT algorithms achieving 20% reduced path deviation and 100% collision-free manipulation.

PUBLICATIONS

2019 Third International conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC).Modified AES using Dynamic S-Box and DNA Cryptography. This paper is a modified version AES in DNA cryptography which is faster in terms of computing and resists cryptographic attacks.