NAGARAJ RAPARTHI

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EDUCATION

TEXAS A&M UNIVERSITY
MS Computer Graphics
Aug 2018 - Aug 2020

SICET
BS Computer Science
June 2011 - April 2015

SKILLS

TECHNICAL
C++ | Python | Go | OpenGL
Unreal Engine | Unity
TypeScript | React
Shader Development
Compute Shaders | GPU Optimization
Real-time Rendering

SPECIALIZATIONS
AI-Driven Graphics Algorithms
Agentic Development | MCP Server
Vision-Language Models
Image Processing | OpenCV
Maya | Zbrush | Max
Git | Perforce | Docker

ACHIEVEMENTS

SIGGRAPH ASIA 2020
GPU-based Motion Matching for Crowds in Unreal Engine

FILM CREDITS
The Justice League
Ghost In The Shell
Detective Pikachu
Ad Astra | The Predator
Murder On The Orient Express

EXPERIENCE

MINIO | Software Engineer
November 2024 – Present

- Built AI-driven visual content generation pipeline processing structured and unstructured data, leveraging vision-language models for automated image synthesis, comic generation, and video composition with dynamic subtitles and transitions.
- Architected enterprise-grade agentic AI platform for automated data analytics with multi-agent orchestration (planner, coder, summarizer), enabling intelligent report generation and complex query processing at scale.
- Developed full-stack system spanning Go backend (gRPC/REST APIs), Python AI workers with event-driven processing, and React frontend with real-time progress tracking and interactive visualizations.

APIRA TECHNOLOGIES | Unreal Engineer
April 2022 – November 2024

- Led real-time rendering pipeline development for metaverse avatar system, implementing advanced rendering techniques that doubled frame rates while significantly improving visual quality.
- Developed artist-friendly tools and professional rendering workflows, enabling non-technical team members to iterate rapidly on high-quality avatar and scene content.

VAL G. HEMMING SIMULATION CENTER | Graphics Engineer
May 2020 – April 2022

- Optimized Motion Matching animation algorithm through compute shader implementation, achieving 95% reduction in computation time and enabling real-time animation on hundreds of characters simultaneously.
- Engineered computer vision and display algorithms for Wide Area Virtual Environment (W.A.V.E) using OpenCV, contributing to medical simulation research. Developed automated projector alignment system, reducing annual costs by over $50,000.

MOVING PICTURE COMPANY (MPC) | 3D Modeling Artist
June 2016 – July 2018

- Delivered production-quality 3D models for high-profile Hollywood films including The Justice League, translating concept art into detailed props and characters using advanced sculpting techniques.

KEY PROJECTS

GPU-BASED MOTION MATCHING FOR CROWDS IN UNREAL ENGINE | SIGGRAPH Asia 2020
C++ | Unreal Engine | Compute Shaders

- Implemented GPU-accelerated motion matching algorithm computing frame-by-frame calculations in parallel, enabling real-time large-scale crowd simulations with industry-standard animation quality.

ENTERPRISE AI ANALYTICS PLATFORM Go | Python | TypeScript | React | NATS

- Full-stack agentic AI system with multi-agent orchestration, event-driven processing, and real-time visualization for automated data exploration and intelligent report generation.

AI-DRIVEN VISUAL CONTENT GENERATION Python | Vision-Language Models | MoviePy

- Automated media pipeline creating social media content from employee data, leveraging multimodal AI for comic generation and dynamic video composition with subtitles.