NAGARAJ RAPARTHI

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EDUCATION

TEXAS A&M UNIVERSITY
Masters in Computer Graphics
August 2018 - August 2020

ASIAN INSTITUTE OF DESIGN
Diploma In 3D Game Art
May 2015 - May 2016

SICET
Bachelors In Computer Science
June 2011 - April 2015

SKILLS

PROGRAMMING
C++ | Python | OpenGL
Maya API plugin development
Unreal Engine shader, plugin and blueprint development
Development with Microsoft Visual Studio
Shader Development
Modeling | Sculpting | Texturing
Lighting | Rendering

TOOLS
Maya | Zbrush | Max
Unreal Engine | Unity 3D
Microsoft Visual Studio
Perforce | Git
Nuke

COURSEWORK

GRADUATE
Physically Based Modeling
Image Synthesis
Computer Graphics
Advanced Computer Animation
VR Game Development
Computational Photography

ACHIEVEMENTS

FILM CREDITS
The Justice League
Ghost In The Shell
Ad Astra
The Predator

OTHER FILMS
Murder On The Orient Express
Detective Pikachu
The New Mutants
Maleficent: Mistress of Evil

EXPERIENCE

APIRA TECHNOLOGIES | Unreal Technical Artist
April 2022 – Present

- Played an integral role within a stealth startup team dedicated to the design, construction, and ongoing maintenance of code for real-time rendering of avatars and scenes in the Metaverse, leveraging Unreal Engine.
- Orchestrated remarkable enhancements in rendering quality and efficiency, optimizing real-time performance by the addition of professional rendering methods, including modular real-time advanced lighting and scenes with runtime DLC integration.
- Researched and developed a real-time, artist-friendly tool for non-linear expression scaling of facial motion capture data, optimizing incoming expression vector streams that influence Avatar morph targets. This tool played a pivotal role in significantly enhancing Metahuman's facial expression quality and visual fidelity, proving instrumental during client demonstrations.

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

- Engineered display, image processing, and computer vision algorithms for the Wide Area Virtual Environment, advancing medical simulation research.
- Enhanced Motion Matching algorithm by devising comprehensive test strategies aligned with industry standards, leading to improved functionality and security. Achieved a remarkable 95% reduction in computation time by implementing parallel GPU threading within Unreal Engine.

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

- Contributed to high-profile Hollywood film productions, adeptly crafting intricate props and characters using advanced high-poly 3D modeling and sculpting techniques.
- ranslated creative 3D PreViz, reference, and concept art into production-quality models for prominent films like The Justice League, The Predator, and Detective Pikachu, uniting technical and artistic strengths for seamless collaboration.

PROJECTS

GPU-BASED MOTION MATCHING FOR CROWDS IN THE UNREAL ENGINE | SIIGRAPH ASIA 2020
C++, Unreal Engine

- Implemented a technique that computes the calculations for the motion matching algorithm every frame in real time in parallel using GPU threads which improved it's efficiency and allowed for large crowd simulations.

LARGE SCALE PROJECTOR ALIGNMENT FOR THE WIDE AREA VIRTUAL ENVIRONMENT | WAVE
C++

- A scalable image warping method developed to automate projector alignment for the 48 projector alignment setup inside the WAVE. The multi-threaded and distributed approach makes very frequent alignments possible via a tablet and inexpensive webcams.