

# NAGARAJ RAPARTHI

nagarajraparthi.xyz | nagarajraparthi31@gmail.com | 1-682-276-9799

## 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 | Vulkan  
HTML | CSS | jQuery  
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

### VAL G. HEMMING SIMULATION CENTER | GRAPHICS ENGINEER

May 2020 – Present

- Develop display, image processing and computer vision algorithms for the Wide Area Virtual Environment to support the VME Lab's medical simulation research and development initiative.
- Devise and execute test plans to assess Motion Matching algorithm to improve functionality, integrity, and security based on industry practices and internal policies.
- Assessed functionality and improved Motion Matching software by decreasing it's computation time by 95% through parallel GPU threads within Unreal Engine.
- Collaborate with developers and performance engineers to enhance efficiency and identify performance bottlenecks.
- Identify possible system enhancements to improving functionality and streamline administration.

### MOVING PICTURE COMPANY (MPC) | 3D MODELING ARTIST

June 2016 – July 2018

- Worked on VFX demanding Hollywood movies to model props and characters with extensive experience in high-poly 3D modeling and sculpting.
- Conceptualized compelling 3D PreViz, reference and concept art into production quality 3D models for movies like The Justice League, The Predator and Detective Pikachu.
- Worked with other artists, animators, and look development artists to meet the clients requirements and translate artistic vision into visual medium.
- Created sequences under tight deadlines and seamlessly integrated with other components while maintaining high standards of quality.
- Combined technical and artistic abilities to accomplish challenging modeling objectives while ensuring effective cross-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.

### REAL-TIME RENDERING ENGINE(WIP) | VULKAN | OPENGL

C++

- Real - Time physically based rendering pipeline with debugging, profiling capabilities and an integrated physics library using modern graphics rendering algorithms from both Vulkan and OpenGL 4.0.