MADHU RATNAKAR

FRONT-END/GRAPHICS SOFTWARE ENGINEER

CONTACT

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SKILLS

PROGRAMMING
C++, C#, C, Python, Java, VEX, JavaScript, Bash, Verilog, MATLAB, HTML, CSS, Object-oriented Programming, React.js, Next.js, Processing.js, Vulkan, OpenGL, AI, Computer Vision, Linux, Virtual Reality, TypeScript

SOFTWARE
Visual Studio, GitHub, Figma, Houdini, Unreal Engine, Maya, Unity, Blender, Adobe Creative Cloud, Autodesk Inventor, Esri

TECHNICAL DESIGN/ART
Video Game Design and Mechanics, VFX, Rigging, 2D/3D Animation, 3D Modeling, Physics-based Simulation, Shader Programming, Niagara, Unreal Blueprints, Tailwind CSS, Bootstrap

VOLUNTEERING

SIGGRAPH 2024, DENVER
Selected as a student volunteer, I was involved in facilitating conference activities, primarily the VR theater and VR kiosks. I helped attendees experience cutting-edge VR technology, providing technical assistance and ensuring smooth operation and high-quality immersive experiences.

CERTIFICATIONS

Google UX Design - Professional Certificate (2024)

XM Cybersecurity – Exposure Management Course (2024)

EDUCATION

MS VISUALIZATION – TEXAS A&M UNIVERSITY 2022 - 2024
Specialized in Graphics Software Development with a focus on Technical Art, VFX, Tool Development, Physics-based Simulations, and Game Mechanics, leveraging 3D software, real-time graphics optimization and APIs, and AI-driven technologies

BS COMPUTER ENGINEERING – VIRGINIA TECH 2017 - 2021
With a minor in Mathematics, coursework includes AI and Machine Learning, Video Game Design, Computer Vision, Digital Image Processing, Embedded Systems, Computer Organization, Microcontrollers, Cryptography, Computer Network and Security

EXPERIENCE

FRONTEND DEVELOPER INTERN – UPUNIKSELF 2024 - PRES
Assisting the start-up with their company website using Next.js, React, and Tailwind CSS and contributing to the development of a fully responsive and dynamic web interface.

GRADUATE TEACHING ASSISTANT – TEXAS A&M 2022 - 2024
Teaching weekly labs and delivering one-on-one assistance to students regarding fundamentals of Visualization Software Development using Python and Maya

COMPUTER ENGINEERING PATENT EXAMINER – USPTO 2021 - 2022
Examined patent applications relating to Computer Error Control, Reliability, and Control Systems to determine whether the claimed invention is patent-eligible.

SOFTWARE DEVELOPER INTERN – NT-CONCEPTS 2019 - 2020
Developed web application for a Non-profit client, The Corps Network for a full lifecycle software development process using Agile/Scrum process

PROJECTS

DYNAMIC CLOUD TOOL - GRADUATE CAPSTONE PROJECT
Developed and presented my own realistic dynamic cloud tool using Houdini Pyro physics-based simulations focusing on optimization and customizability for real-time game engines

ATOMIC BOMB RECREATION – VFX DIRECTED STUDY
Recreated two scenes of the famous Atomic Bomb test along with three other VFX artists under the mentorship of a professional VFX animator from DreamWorks

"FAREWELL" – GRADUATE ANIMATION SUMMER INDUSTRY COURSE
Lead VFX Artist, Rigger, and Microdresser. Also helped with procedural modeling and texturing. Mentored by industry professionals from DreamWorks and Meta

48-HOUR GAME JAMS - CHILLENEUM 2023 AND 2024
Lead Programmer and Game Mechanic for my team. Created games "With Hearts Aglow" and "Save My Eggs" using Unreal Engine. Also helped with UI and animations

CLIMATE CHANGE AWARENESS – VIRTUAL REALITY PROJECT
Engineered a VR application in Unity for a collaborative project and conducted user studies to assess its effectiveness in promoting climate change awareness in a college setting

IOT-ENABLED TRASH COLLECTING ROVER – EMBEDDED SYSTEMS
Developed a trash-collecting rover using IoT and MQTT software, integrating Pixy Camera for navigation and detection, and implemented a robotic arm for automated sorting/disposal