Aniket Rajnish

rajnish.ankt@gmail.com
aniketrajnish.github.io
linkedin.com/in/makra2077

Demo Reel

Skills

- Unity Generalist
- Tools Programming
- 3D Math, Algebra, Calculus
- Version Control
- Optimization, Profiling, Parallelization
- Understanding of 3D, Animation & Rendering Pipeline
- Technical UI Creation
- Material & Shader Creation
- Particle Systems & VFX
- Generative AI APIs
- Technical Documentation
- Video Editing

Tools & Languages

- Unity, C#, HLSL, Compute Shaders,
- Python, PyMEL, PyQT
- NVIDIA Omniverse
- Adobe XD
- Unreal Engine
- Git, GitHub, Perforce
- Maya
- Adobe Photoshop
- Adobe Premiere Pro

Achievements

- **Summer Geometry Initiative Fellow** at MIT Computer Science and Artificial Intelligence Laboratory.
- Recipient of the **Gold Medal for Outstanding Innovation** at IIT Gandhinagar.
- Recipient of the **Director Fellowship Award** at FIEA.
- **1 of 100** students selected for Chennai Mathematical Institute in 2019.
- **Ranked #2 Nationally,** Indian Commerce Olympiad (Maths, Aptitude).
- **Top 0.4 percentile** in JEE Mains & **0.3 percentile** in JEE Advanced.
- **Ranked #22,** out of 10k+ participants, Brackeys Game Jam 2021.1.
- **Ranked #1,** Jamboost Game Jam out of 300+ participants, won $1000.
- Received **Silver Medal** at Inter IIT Tech Meet for IGDC Gamedev Challenge
- Developed games **downloaded over 521K+** and **played 2M+ times.**

Education

2023 - 24 | FIEA, University of Central Florida | MS, Technical Art Track
2019 - 23 | IIT Gandhinagar | B.Tech, Mechanical Engineering, Design Minor

Experience

Technical Artist, Amazon Robotics **(Ongoing)**

- Working on pipelines & simulations for efficient training of warehouse robots.
- Authored a pipeline to standardize the offline creation of collider meshes (convex, bounding, simplification) for our assets using state of the art algorithms like collision aware convex decomposition & quadric error metrics using reeb-topological info
- Unblocked ongoing projects by parallelizing tasks on GPU, batch decimating assets & textures, using convex shapes of meshes for computing LIDAR data, vectorizing operations, and using fabric, decreasing compute times as much as 16 folds.
- Supporting Synthetic Data generation by establishing a pipeline for creation of randomized 3D USD data of humans with varied poses, clothes, props & features.
- Supported a library for using NVIDIA Warp to parallelize our workflows on GPU.

SGI Research Fellow, CSAIL Lab, MIT **(July - August 2024)**

- Worked on establishing efficient robot designs for Lightspeed Studios, using Simulated Annealing, Genetic Algorithms & MCTS. **[Repository]**
- Working on a state of the art algorithm to extract explicit representation (mesh information) from implicit representations like SDFs by using VDFs to address the issues with existing algorithms. **[Repository]** **[Blog]**

Technical Artist, Dragonfly Games [*School Project]* **(Nov 2023 - July 2024)**

- Developed post effects and VFX for the game contributing to its comical look.
- Responsible for establishing PBR workflow, implemented material functions to assign fine & parental controls over overall look of the environments developed.
- Responsible for all the tool development for the team, automating many tasks.
- Developed an optimized curly hair solution, reduced the draw calls by 64x. **[Blog]**

Technical Artist & Project Lead, Lockheed Martin *[Contract]* **(Jan - April 2024)**

- Led a team of 8 to develop a VR experience that demonstrates the JADO system and has a modular 3D asset gallery with a conversational AI companion.

Third Party Developer, CrazyLabs *[Contract]* **(Aug 2021 - Aug 2022)**

- Contracted as a third-party game studio, and led a team of four, resulting in development of **6 prototypes**, **30 concept pitches** and an unannounced title.
- Demonstrated a keen eye on time and performance constraints that go along with hypercasual prototype development along reaching a CPI as low as 0.28$.

Technical Artist & Designer, 19 Souls on Board *[Contract]* **(May - July 2022)**

- Provided assistance in shader & gameplay programming, and VFX. **[Blog]**

Solo-Developed Tools/Pipeline

Collider Optimizer for Unity [300+ stars on Github] [80.lv Article]

- Developed a tool that optimizes Unity's Colliders, it decreased performance overhead of real-time destruction by 2 folds in a course group project.
- A C# implementation of the Ramer Douglas Peucker Algorithm and Quadric Error Metric simplification is used to smooth polylines and reduce number of paths created by Polygon Colliders and reduce the poly count of mesh collider.

Text to Material for Unity

- Developed a pipeline to generate materials from text prompts for a course group project to prototype materials quickly for placeholder assets & greyboxing.
- Sets material properties, generates base & normal maps using OpenAI API calls.
- Implemented algorithm to parse material properties from natural language input.

PyQt Multi-Window Sync [300+ stars on Github] [100k+ views on YouTube]

- Developed a windows GUI application using PyQt5 and qtSignal that demonstrates real-time synchronization between multiple window instances.

Constructive Solid Geometry Dataset Generator

- Developed a GPU-accelerated tool that creates procedurally raymarched 3D shape data sets and provides fine control over their transformations and quality.
- This tool automated the shape dataset generation pipeline for our CSE lab.