Aniket Rajnish

Third Year Undergraduate
IIT Gandhinagar
Computer Graphics | Game Development | VFX & Video Editing

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Education

Degree	Institution	CPI/%	Year
B.Tech	IIT Gandhinagar	7.9	2019 - Present

Experience

- **Game Developer, [CrazyLabs](#) (3rd biggest mobile game publisher)** **[Aug 2021- Mar 2022]**
  - Contracted as a partner game studio to help create scalable hypercasual games by looking after the ideation and development of the games. The prototypes developed are listed [here](#). The concepts delivered are listed [here](#).
- **Technical Art intern, [FIEA, University of Central Florida](#)** **[May 2022- Present]**
  - Assisting the 19SOB team at FIEA with their capstone project as a tech artist under the guidance of Prof. Ron Weaver. The development update to the game can be found [here](#).

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- **Secretary, [DigiS IITGn](#) (Game development club of IITGn)** **[Aug 2020 - Apr 2021]**
  - Led a team of over 100 game developers and taught them the basics of Unity & Game Development.
  - Organized an AR workshop attended by 300 people from IIT Bombay, IIT Hyderabad, IIT Gandhinagar.
  - Organized [GameJam 2020 AD](#) in collaboration with Amalthea IIT Gandhinagar. 600+ people participated to make 90+ games making it the third biggest Indian game jam to be held on itch.
- **Technical Coordinator, IIT Gandhinagar** **[Apr 2021 - Present]**
  - Leading a team of 10 people to assist the Technical Secretary to conduct the Technical activities held at IITGN efficiently by overlooking the functioning of all the technical clubs and events.
- **Eureka Video Coordinator** **[August 2019]**
  - Led a team of 12 video editors that made the [Foundation Programme Video](#) of Btech'19, IITGn.

Skill Summary

- **Languages:** C#, HLSL, GLSL, C++, C, Python
- **Tools:** Unity, OpenGL, MATLAB, GameMaker Studio 2, Unreal Engine 4, Autodesk Inventor, Autodesk Fusion 360, Adobe Premiere Pro, Adobe After Effects, Photoshop, Blender, Adobe XD

Projects

- **[Raymarching Engine](#)**
  - Currently developing a raymarching engine for Unity that would allow rendering complex geometry like fractals, n-dimensional objects, volumetric clouds, etc. using very little computation costs.
  - Implemented computer buffers, raymarching sdfs, and a custom editor in Unity.
- **[3D Render using Gaussian elimination](#)**
  - Mathematically modeled and implemented a 3D rendering technique that uses numerical methods to calculate the intersection of planes and render 3D objects as a part of the MA202 project course.
- **[Rendering a 4D Hypercube](#)**
  - Demonstrated a 3D section of a rotating 4D Hypercube (with hardcoded coordinates) by using rotation and projection matrices as a part of the MA202 project course.
  - Extended this approach to render the [4D Hypercube (with faces) in Unity](#) using mesh generation and GL Library. Created an [NFT collection](#) of these 4D Hypercubes as well.
- **[Specular Lighting in OpenGL](#)**
  - Implemented specular lighting in OpenGL by following tutorials from [Michael Grieco](#).
- **[Raycast 3D Renderer](#)**
  - Developed a 3D renderer in Scratch using the traditional concept of raycasting used in games like VCOP2 and Wolfenstein 3D. Implemented features like varying camera FOV & shadow mapping.
  - Any 2D map you input gets converted into a 3D world that gets procedurally generated around you.
- **[Project Holly](#)**
  - Built a platform for interactive movies to unify games and movies using Unity. Developed an asset that streams a video in small chunks based on choices made using Firebase.
- **[Jelly Physics in Unity](#)**
  - Jelly physics implemented in Unity using mesh deformation. Used this simulation in a [game](#) as well.
  - Extended this approach for slime simulation in Unity by decreasing the stiffness.
- **[Non-Euclidean World in Unity](#)**
  - Optical illusion made by using multiple intersecting single-sided planes instead of a 3d mesh.

o   Made [another non-euclidean world](#) using portals and layered camera texture on a plane.

Games

- **Two Opposites**
    - o   Developed in 7 days for the 2021 Brackeys Game Jam (with 10k+ participants). The game secured #22 rank in the innovation category, #44 in the Game Design category, and #71 overall.
    - o   Programmed every mechanic of the game (mirror movement, multiple-camera setup, etc.)
    - o   Developed my own 2d lighting system from scratch using raycasts. Repo [here](#).
- **Faster Than Light (Hyper Casual)**
    - o   Won the Jamboost game jam hosted by [Chartboost](#) and a prize of 1000$.
    - o   Got 180$ for promotion by [Kwalee](#) as it did fairly well in their CPI tests.
    - o   Engineered every mechanic & enemy AI of the game and the lighting and shaders used in the game.
    - o   Optimized time control mechanics and real-time indoor lighting for the mobile platforms. Repo [here](#).
- **Faster Than Light (PC)**
    - o   Developed in 7 days for the 2020 Brackeys Game Jam (with 9k+ participants). Secured #71 rank in the Audio category and #132 overall.
    - o   Engineered every mechanic & enemy AI of the game and the lighting and shaders used in the game.
    - o   Implemented player physics from scratch that would allow the player to move in space independent of the world's timescale as well as the bullet-time mechanics.
- **Shoot The Numbers**
    - o   Optimized multiple navmesh agents for mobile devices.
    - o   Wrote a shader that supports both transparency and interpolation between two colors.
    - o   Wrote swerve and algebraic gates mechanics trending in hypercasual games these days.
- **Hoof Cleaning ASMR**
    - o   Wrote texture masking algorithm to erase/paint textures over meshes.

Find other games developed by me [here](#).

Relevant Coursework

- **DES 492-1**- The course involved modding a pre-existing game, developing a sandbox-styled game, speculation of different permutations & combinations of different outcomes of the game, and development of a hypertext game with a non-linear branching story.
    - o   [Modding Assignment - Maze Game made 3D](#)
    - o   [Sandbox & Speculation Assignment - Joined Together](#)
    - o   [Hypertext Assignment - Friday Hai](#)

VFX & Edits

- **Shaders - GameJam 2020 AD Trailer**
    - o   This shader used in the video uses one-sided features of multiple planes for a non-euclidean look.
    - o   Also wrote a shader to replicate the look of HDRP reflective materials using Unity's built-in render pipeline and a reflection probe for the mascot and jar.
- **VFX Graphs - GameJam 2020 AD Theme Reveal Video**
    - o   Used VFX graphs for the particles so everything that you see in this video is made out of '2020'.
- **Motion tracking in Blender and After Effects - Recreated Coldplay's Up&Up Music Video**
- **Particle System in Unity- Psychedelic Edit**
- **Particle System in Blender - Recreated Interstellar's Black Hole**
- **Twixtor in Adobe Premiere Pro - Blithchron 20 Teaser**
- **Particle System in Unity - Fractals**

Achievements

- Top 0.4 percentile in JEE Mains 2019 out of 1.3 million students.
- Top 2 percentile in JEE Advanced 2019 out of 2 lakh students.
- One of the 100 students selected for [Chennai Mathematical Institute](#) in 2019.
- One of the 27 authors whose story was published in [Cobalt Blue](#) across a nationwide competition amongst all students of DPS across India.
- Ranked #22 in Brackeys Game Jam out of 10k+ participants.
- Won Jamboost game jam.