

#### about me.

I'm a senior undergraduate at IIT Gandhinagar. I'm into developing games, VFX, editing videos, computer graphics, and simulations.





# links to projects. -



# Aniket Rajnish

+917765961770 aniket.r@iitgn.ac.in Portfolio Website

## education.

**IIT GANDHINAGAR, 2019 - 23 | CPI 8.33 / 10** 

Majors in Mechanical Engineering with minors in both CSE & Design

# work experience.

#### Game Developer, CrazyLabs

(Aug 2021 - Mar 2022)

- Led partner game studio in the creation of hyper casual games, resulting in development of <u>6 prototypes</u>, <u>30 concept pitches</u> & 1 market-ready game.
- Oversaw the ideation & development process, resulting in the creation of high-quality and innovative games with potential for wide audience appeal.

# Technical Art & Design Intern, FIEA, University of Central Florida (May 2022 - July 2022)

- Provided technical art & design assistance to the <u>19SOB</u> team at Florida Interactive Entertainment Academy (FIEA) on their capstone project, including work on shader & gameplay programming, and the development of particle & VFX systems under guidance of Prof. <u>Ron Weaver</u> & <u>Chris Roda</u>.
- Curated development logs and documentation that can be found <u>here</u>.

# positions of responsibility.

## Secretary, Game Dev Club, IIT Gandhinagar (Aug 2020 - Apr 2021)

- Selected as the secretary during my sophomore year itself and guided over 100 game developers about Unity and the basics of game development.
- Organized & led AR workshop attended by 300+ people from multiple IITs and NITs, where I taught Unity & Vuforia for AR application development.
- Successfully organized <u>GameJam 2020 AD</u>, the third largest Indian game jam on itch.io at the time, with 600+ people submitting 90+ games.
- Led a 7-week project to publish a game each week for college community.
- Built connections with big hypercasual studios like Kwalee & CrazyLabs.

#### Technical Secretary, IIT Gandhinagar

(Apr 2022 - Present)

- Leading a team of 35 people across various technical disciplines, pioneering the Institute's maiden Student Satellite Programme, student led courses, technical fests, while building spaces for technical Innovation, among others.
- Led as IIT Gandhinagar's Contingent Leader to a historic achievement of securing 3 medals and an overall 13th position in Inter IIT Tech Meet 2023, marking the highest achievement by IIT Gandhinagar in any Inter IIT event.

## achievements.

- Recipient of the **Director Fellowship Award** at FIEA, University of Central Florida– awarded to the best applicants for MS degree in Interactive Media.
- 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 447K+ and played 2M+ times.
- 1 of 27 student-authors published in Cobalt Blue among students of DPS.
- 1 of 100 students selected for Chennai Mathematical Institute in 2019.
- Ranked #2 Nationally, Indian Commerce Olympiad (Maths, Aptitude).
- Received **11/10** grade in MS 403: Engineering Entrepreneurship course.
- Recipient of **Teaching Certification** from IIT Gandhinagar.
- Top 0.4 percentile in JEE Mains & 0.3 percentile in JEE Advanced.

### relevant coursework.

Past: DES 499 Jantar Mantar Reconstruction, CS 499 SDFNet (Graphics Research), DES 492-1 Gaming New Worlds, MS 403 Engineering Entrepreneurship, ES 102 Introduction to Computing, ES 201 Introduction to Design and Innovation, ES 101 Engineering Graphics, DES 391-1 Board Games, DES 692 Visual Design for Academia Ongoing: ES 301 Data Structures and Algorithms II, DES 302 Creativity, Design and Doing, DES 392-2 Information Design, CS 328 Introduction to Data Science



# projects.

### C# + Unity Implementation of a Raymarching Graphics Engine.

- Individually developed a fast raymarcher for Unity with support for 28 primitives (including fractals, n-dimensional objects, volumetric clouds).
- Implemented compute-buffers, raymarching signed-distance functions, built a custom interface for manipulating shader parameters through the editor.

#### CSG + CNN to extract 3D Models from 2D images

 Utilizing Constructive Solid Geometry and Convolutional Neural Networks to extract 3D models from 2D images, with a focus on developing a fast implementation of NeRF under guidance of Prof. Shanmuganathan Raman.

#### MHRD-Project for the reconstruction of Jantar Mantar

 Working with Prof. <u>Sameer Sahasrabudhe</u> to design, develop, and implement a virtual tour experience housed in the Jantar Mantar.

#### Mathematical Model for Rendering 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 course project.
- Extended this approach to render the 3D projection of <u>4D hypercubes</u>.

## Procedural Generation of 3D space from 2D map using Raycasts

- Single-handedly developed a 3D Renderer in Scratch using principles of raycasting, with features such as varying FOV and shadow-mapping.
- Any 2D map input gets converted into a procedurally generated 3D world.

#### games.

## Soul Shard (FIEA, University of Central Florida) published on Steam

- Acquired expertise in Unreal Engine materials, lighting and reflections, blueprinting, Niagara, landscape sculpting, post processing, and Quixel.
- Developed a dynamic footprint system for main characters and VFX effects such as stylized fire, smoke, debris, and flames.
- Created a dynamic snowstorm system and implemented rope physics for cables, as well as a dynamic loading screen for various scene transitions.

#### Two Opposites (Ranked #22 internationally, Brackeys Game Jam)

- Made in a week for the 2021 Brackeys Game Jam
- Formulated and developed a <u>2D Lighting System</u> in C# for Unity using raycasts and Unity started official support for it in a later update.
- Programmed every mechanic of the game which included, but not limited to mirror movement, multiple camera setup, etc.

#### Faster Than Light (PC) (#3 in Popularity, Brackeys Game Jam 2020.2)

- Engineered all mechanics, enemy AI, as well as the lighting and shaders.
- Developed player physics in 48 hours, allowing for <u>timescale-independent</u> movement in space, timescale manipulation, & <u>bullet-time mechanics</u>.

#### Faster Than Light (Hyper Casual) (Won Jamboost Game Jam & 1000\$)

- Engineered all mechanics and enemy Al in the game, lighting and shaders.
- Optimized time control mechanics and real-time indoor lighting for mobile platforms, and made these open source with a <u>public repository</u> available.
- Earned 180\$ for promotion by Kwalee & performed well in their CPI tests.

#### Are Ya Winning, Son? (Made in 48 hours)

- Became proficient in generating ideas & quickly prototyping them in Unity.
- Developed shaders & implemented post-processing effects to create a <u>CRT</u> <u>TV aesthetic</u>, gaining technical expertise in implementing visual effects.

# vfx and edits.

Shaders: Game Jam 2020 AD Trailer, VFX Graphs: Game Jam 2020 AD Theme Reveal, Motion tracking: Recreated Coldplay's Up&Up Music Video, Particle System: Psychedelic Edit, Particle System: Recreated Interstellar's Black Hole, Twixtor: Blithchron 20 Teaser, Particle System: Fractals