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Portfolio : <https://sadhax18.github.io/portfolio/>

GitHub: <https://github.com/sadhaX18/>

EDUCATION

MSc Computer games

Result: Distinction

2022 – 2023

Queen Mary University of London

Relevant Modules: Advanced Game Development (90.7%), Interactive agents and Procedural Generation (75.4%), Fundamentals of Game Design(76.1%), Computer Graphics (78.8%), Computational Game Design (67.9%), AI in games(77.6%), Multi-platform Game Development (65.2%)

B.Tech ECE with specialization in IOT and sensors

Result: 7.6

2016 – 2020

Vellore Institute of Technology, Vellore

Relevant Modules: Problem solving and Programming (S), Object oriented programming (A), Data structures and algorithms (C), Information Theory and Coding (B), Technical Answers to Real World problems(A)

CURRENT PROJECTS

Automated playtesting and analysis of Monopoly Deal - MSc Dissertation

May/2023 - Now

- Worked on Tabletop Games Framework(TAG), which is an Modern board Games and AI testing framework built in Java.
- Implemented Monopoly Deal with abstraction for imperfect information and breaking down action spaces into a series of decisions.
- Analyzed AI agent performance and Game mechanics with playtesting data.
- Collaborating with project guide to organize work into a research paper and get the work published in Conference on games 2024

PROJECTS

Search for a star - Just another 2D platformer

Dec/2023 - Jan/2024

- Developed a playable 2D platformer game prototype in C++ from a provided base framework.
- Implemented a simple Entity Component architecture for code simplicity and modularity.
- Implemented an automatic tilemap visualizer from a 2D int array for easy setup of various levels.
- Implemented the Input handler pattern for managing controls and execution.
- Learned and implemented physics and collisions using Box2D
- Downloadable program : <https://sadhax18.itch.io/just-another-2d-platformer>
- Code : <https://github.com/sadhaX18/Search-for-a-star/tree/main/Star>

Driver attention monitoring - B.Tech Project

Nov/2019-Apr/2020

- Implemented a combination of feature extraction using computer vision and dynamic programming for detection of the attention levels of the driver
- Implemented real time cloud data collection and event triggers in IBM cloud.
- Deployed the complete system with Raspberry pi and tested working in a controlled environment.
- Research paper published in IJITEE ISSN: 2278-3075, Volume-9 Issue-6, April 2020.

Game engine programming

Jan/2023 - Apr/2023

- Developed a game engine from scratch in C++ Starting from a simple working definition using object oriented programming and moving on to advanced Game Programming Patterns.
- Worked in a team of 2 using GitHub branches for efficient collaboration.
- Personally implemented Graphics system, Logic system, movement system, the base Entity Component system architecture and memory management with object pool pattern and flyweight pattern.
- Code : <https://github.com/sadhaX18/AGD-Simple-Mini-Game>

Interactive agents and procedural generation (Troll Lair)**Jan/2023 - Apr/2023**

- Developed a system for procedural generation of cave type levels in unity 2D with a modified cellular automata.
- Developed AI agents with unique characteristics using NPbehave and Movement AI libraries.
- Simulated the behaviors of generated agents in the procedurally developed levels.
- Build : <https://sadhax18.itch.io/iapg-troll-lair>

Computational creativity**Sept/2022 - Dec/2022**

- Addressed the philosophical question of "What is creativity?".
- Modified a Controlled GAN network with latent vector modification based on current performance metrics.
- Deployed and analyzed the developed system which works as a creative system as per my definition of creativity.

EXPERIENCE / INTERNSHIPS

NUS / Corporate Gurukul**Academic Workshop****Jun/2019**

- Attended an academic workshop hosted by Corporate Gurukul in association with National University of Singapore
- Learned about the application of sensor tags and IOT in the planning and development of a smart city.
- Generated movement data from the public transport in Singapore using an IOT sensor tag.
- Microsoft Azure certification for developing cloud systems.

TCS academic Internship**Intern data analyst****May/2018 – July/2018**

- Worked in the data collection and analysis of electronic appliances within a house using only the available Power logger for Non intrusive load Monitoring.
- Developed an algorithm with Machine learning techniques to form clusters of data to identify which appliances are in use.

Becoming I Foundation(NGO),VIT**Relationship Manager****Jan/2018 – Apr/2019**

- Maintained relationships with local Schools for organizing events and sessions.
- Organized and assigned members to run sessions based on the member and school's availability.

EXTRACURRICULAR ACHIEVEMENTS

- Achieved 98%ile score in a national level competitive exam for logical, verbal and quantitative reasoning. **(CAT 2021)**
- Hosted multiple Online community gaming tournaments on discord for Valorant and Rainbow 6 siege.
- Volunteered at a NSS camp organized by the university (VIT).

HOBBIES AND INTERESTS

- Volunteering for Civil rights and social action
- Mental health awareness and feminism
- Video games, mainly couch co-op games and board games.
- Novels, especially queer romance novels. Favorite author : Alice Oseman
- Anime and Manga.