

Yash Bhartia

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Education

Birla Institute of Technology and Science, Pilani

Goa, India

B.E. IN COMPUTER SCIENCE

August 2019 - May 2023

- **Relevant Coursework:** Linguistics, Object Oriented Programming, Data Structure and Algorithms, Database Management Systems, Probability and Statistics, Computer Programming

Select Projects

Dots and Boxes

Multiplayer Games

[Github](#)

February 2020

- 2 multiplayer games; Tic-Tac-Toe and Dots and boxes made in unity, made using Firebase and Rest Client for Unity
- The game connects the device to another device playing the same game

Wizards and knights

2D Platformer

[Itch.io link](#)

June 2020

- Demo Platformer game made in unity with puzzles, fighting, and platforming challenges
- Implemented better shadow for sprites, along with buoyancy and other effects
- Played by more than 60 people

Procedural Dungeon Rooms

Unity based Algorithm

[Github](#)

April 2020

- A reusable asset to generate dungeon rooms procedurally in Unity
- Algorithms used: Delaunay triangulation, Minimal tree spanning and optimizations like grid correction
- App can generate rooms and interconnected corridors entirely from scratch, taking up to a few minutes for each generation

Particle Vfx

Game effect

[github](#)

August 2020

- Reusable and editable effects: fireflies, lightning, fire
- Made only using unity's particle system and 2d lighting

Quantum Chess

Quantum Computation

[Github](#)

February 2021

- Open source Quantum Chess implementation, made with Qiskit, hichesslib, and Qt
- Implemented functions like entangle, split and measure for the quantum chess pieces

Pokebattle

Reinforcement Learning

[Github](#)

August 2020

- Built an agent based on DQN network to play and win games against a fixed algorithm.
- Finished the Pokemon Battle environment, implemented a more flexible algorithm, added data for various moves and Pokemons scrapped and cleaned from multiple sources.

Rainbow RL Implementation

Reinforcement learning

[Github](#)

December 2020

- Built a Deep Q network based agent to play Atari games in OpenAi gym environment using PyTorch
- model trained for 400 episodes wins all 21 points for pong in test

Flipkart Categorizer

Natural Language Processing

[Github](#)

April 2021

- A transformer (XLNet) based multi-class classifier to predict Category of item given item description. Cleaned data, visualized using Seaborn plots, and fixed class imbalance using class weights.
- model gave F1 score of .74 on validation set

Teaching Experience

Introduction to Machine Learning and Deep learning

INSTRUCTOR

January 2021 - Present

- Responsible for delivering lectures on PyTorch, Computational Graphs, Neural Nets and Natural Language processing to 70 students and mentoring their final project for the course

Introduction to Game Development and XR

MENTOR

January 2021 - Present

- Responsible for mentoring lectures on game development in Unity and modeling Blender for over 10 students and mentoring their final project for the course

Publication

LRG at SemEval-2021 Task 4: Improving Reading Comprehension with Abstract Words using Augmentation, Linguistic Features and Voting

SemEval

MENTOR: Tirtharaj Dash

2021

Abheesht Sharma*, Harshit Pandey*, Gunjan Chhablani*, **Yash Bhartia**, Tirtharaj Dash

Arxiv, Code

NLRG at SemEval-2021 Task 5: Toxic Spans Detection Leveraging BERT-based Token Classification and Span Prediction Techniques

SemEval

MENTOR: Shan Suthaharan

2021

Gunjan Chhablani*, Abheesht Sharma*, Harshit Pandey*, **Yash Bhartia**, Shan Suthaharan

Arxiv, Code

Skills

Frameworks Unity, Blender, Numpy, Scikit, PyTorch, Linux

Tools VsCode, Vim, GIT, MySQL

Languages Python, JAVA, C#/C++, SQL, LaTeX

Committees

DevSoc Game Development Vertical Head of Developer's Society (DevSoc - BITS Goa)

SAIDL Core Member at the Society for AI & Deep Learning (SAIDL - BITS Goa)

LRG Core Member at the Student Language Research Group (LRG - BITS Goa)

Abhigyaan Batch head for Abhigyaan organisation, educating the unprivileged