

# 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:** Artificial Intelligence, Deep Learning, Foundations of Data Science, Linguistics, Cognitive Neuroscience, Compiler Construction

## Experience

### Game innovations lab, New York University

Remote

RESEARCH INTERN

Oct 2022 - Present

- Designing a game engine that uses natural language input to help game designers.
- The engine can suggest game features, code, and sprites to the game designer. It can also help design the levels of the game itself, with varying levels of difficulty

### Prodapt Solutions

Remote

SOFTWARE DEVELOPMENT INTERN

May 2020 - July 2020

- Built a Pre-onboarding application for new recruits
- Automated the application to schedule meetings, send emails, and manage the database dynamically according to date of joining and HR inputs

### CSIS Department, BITS Pilani

Goa, India

TEACHING ASSISTANT

May 2020 - July 2020

- **CS F429 Natural Language Processing** - Conducted tutorial for the course and mentored over 85 undergraduates **Supervised by** Dr. Swati Agarwal

## 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

## Projects

### Tetris Language Compiler

Programming Language Design

Github

April 2022

- Designed a programming language to make Tetris Game and its Variants, running on terminal
- Implemented the compiler and grammar for the language

### Drug Design using Molecular Generation

Natural Language Processing

FORMAL PROJECT, APPCAIR

August 2021 - Dec 2021

- Leveraging Generative NLP models like transformers and autoencoders to assist Drug Design techniques
- Improved approaches that used GNNs to incorporate domain knowledge into the generative model
- **Supervised by** Dr. Ashwin Srinivasan

## 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

## 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

## 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

## RPG Level Browser Demo

2.5D RPG Scene

[Itch.io link](#)

February 2021

- Illustrated simple level design and fighting combos using on state machine.
- Used Unity to Make the game demo, complete with Sound design and dynamic lighting.
- Played by more than 70 people, playable in browser.

## Skills

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

**Tools** VsCode, Vim, GIT, MySQL

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

## Leadership and Committees

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**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)

**CTE** Instructor, Introduction to Machine learning and Deep learning

**Quark** Instructor, Deep Learning project

**Abhigyaan** Batch head for Abhigyaan organisation, educating the unprivileged