

Suhas Shankar

suhass@iitk.ac.in

EDUCATION

IIT KANPUR

BTECH IN COMPUTER SCIENCE

July 2023 | Kanpur

Cum. CPI: 9.8 / 10.0

LINKS

Github - <https://github.com/agent-q1>

Website - <https://agent-q1.github.io>

COURSEWORK

UNDERGRADUATE

Fundamentals of Computing (ESC101)

Real Analysis (MTH101)

Linear Algebra and Differential Equations (MTH102)

Game Theory and Mechanism Design (CS711)

Data Structures and Algorithms (ESO207)

RESEARCH INTERESTS

Machine Learning

GAN • Adversarial ML • RNN •

Autoencoders • Reinforcement Learning

Computer Vision

Detection • Segmentation • Localisation

Security

SKILLS

PROGRAMMING

Languages

C • Java • JavaScript • Javascript

Frameworks

React • Nodejs • CSS • MongoDB •

Elastic Stack

Cloud

Docker • Kubernetes • AWS

POSITIONS

ACADEMIC MENTOR

MTH101 and MTH102

Real Analysis • Vector Calculus • Linear Algebra • Differential Calculus

STUDENT GUIDE

Mentoring a group of freshers

MUSIC CLUB

SECRETARY

May 2020 - Present

EXPERIENCE

TERASOLOGY | CONTRIBUTOR

Sep 2019 - Present

- Assistant Mentored a **GSOC** project that dealt with optimizations to world generation in game.
- Set up logging and metric monitoring solution for the game on the cloud.
- Numerous Bug Fixes to the Pathfinding module of the game
- Created a **TutorialPathfinding** repository for the game, with detailed documentation and tutorial examples.

KEY PROJECTS¹

AUTOGRADING ANSWER SCRIPTS | AT PROJECT

July 2019 - Dec 2019 | IITK

Project under **Prof Piyush Rai** to push for building a solution to autograde answer scripts of quizzes.

- Used **OpenCV** to center and preprocess the images using techniques such as canny edge detection.
- Used **TensorFlow** to train ML models to recognise patterns in handwriting.
- Used **MERN** stack web application to serve as the interface to allow professors to upload question papers and answer keys

AI DEBATER | GAME-THEORY AND AI PROJECT

Oct 2020 - Present | IITK

Project under **Prof Swaprava Nath** to build a debater using NLP and Game Theory concepts of finding a Sub-game Perfect Nash Equilibrium (SPNE) in a PIEFG to predict the next move which maximises utility. The paper can be found *here*

- Used **Neo4j** as the graphing database to construct the argumentation framework and to find shortest paths.
- Used **BERT** and **AllenNLP** to find relationships between texts of legal data.
- Used **Flask** and **Gupshup** to act as the interface for the bot.

TSOC | TERASOLOGY SUMMER OF CODE

May 2020 - August 2020

- Built a path-finding test bed to analyse various hierarchies within **Hierarchical Path-finding**.
- Implemented Bresenham's algorithm for highlighting paths
- Setup **Elastic Stack** on a **Kubernetes** Engine to stream logs from game instances to the elasticsearch database.
- Setup **nginx** as **ingress controller**, **reverse proxy** as well as **load balancer**.
- Setup automatic **SSL** certificate management using cert-manager.

IITKBUCKS | PCLUB SUMMER PROJECT

May 2020 - July 2020

- Built a **Block-Chain** based cryptocurrency network
- Achieved concurrency of mining blocks as well as making transactions using **workers** in nodejs

ACHIEVEMENTS

2019	Percentile - 99.93	JEE Mains (Among 1,000,000 participants)
2019	AIR - 246	KVPY Fellow (Among 100,000 participants)
2019	Winner	Black Box - Fresher's Programming Contest
2020	CPI - 10.0	Academic Excellence Award IIT Kanpur