Suhas Shankar

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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

ASSOCIATION OF COMPUTING ACTIVITIES

Secretary
Jan 2021 - 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 PROJECTS[1]

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

PROJECT TITLES ARE CLICKABLE