Shrey Tripathi

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LinkedIn | Github | Portfolio

Objective

Junior at IIITB. My research interests lie in the fields of NLP, Multimodal Perception, Software Engineering, and Blockchain protocols. I like to study about the applications of AI in real life.

Education

International Institute of Information Technology (IIIT) Bangalore Aug 2019 – July 2024
Integrated Masters in Technology, Computer Science and Engineering *CGPA 2.87/4.00*
Airport School, Ahmedabad April 2017 – May 2019
Senior School (Class XII) *Aggregate 90.8%*
Airport School, Ahmedabad April 2015 – May 2017
Secondary School (Class X) *CGPA 10.00/10.00*

Research Experience

Automation of Application Processing using Graph Coloring Heuristics May 2021 – Present
Software Engineering Lab (SELab), IIIT Bangalore
Supervisor: Prof. Sujit Kumar Chakrabarti

- We are developing an automated process for the processing of applications for recruitment in large organizations, involving two main aspects: panel creation and interview scheduling
- My work involves studying and applying different graph coloring heuristics, including the Chaitin's Algorithm, Ant Colony Optimization, the Genetic Algorithm, Particle Swarm Optimization, etc. to schedule review/interview panels, to optimize the number of slots and schedule quality of different panels

Work Experience

Teaching Assistant Nov 2021 – Present
Course: Programming - 1 (Python)
Instructor: Dr. Milind Gandhe

Tezos India Fellow Aug 2021 – Oct 2021
Tezos India

- Developed the beta version of a decentralized cryptocurrency safekeeping application on top of the Tezos blockchain, that enables safe and transparent transfer of digital assets to predefined accounts in unprecedented scenarios of loss of private keys or user demise
- Succesfully built the frontend of the application using React, and integrated various end-points of the Smartpy backend with the frontend using the Taquito.js javascript library

Associate Jan 2021 – May 2021
Web Science Lab (WSL), IIIT Bangalore

- Built the first version of a Capacity Based Access Control (CBAC) portal for the Indian Urban Data Exchange (IUDX) framework, under the supervision of Professor Srinath Srinivasa
- Successfully developed the basic functionalities from scratch, like user authentication, world initialization, role selection, role modeling, and role(privilege)-based data access

Projects

CryptoWill | *React, SmartPy, TypeScript* | Project Aug 2021 – Oct 2021

- CryptoWill lets users store their cryptocurrencies in a decentralized "will", so as to prevent their holdings from becoming dormant in case of loss of private keys or user demise
- Contributed to the front-end of the application by developing the React app with Typescript, and then integrating it with the SmartPy endpoints and contract storage with the Taquito.js Javascript library

Pagerank | *Python* | GitHub July 2021 – Aug 2021

- Implemented a simplified version of the Pagerank algorithm which ranks a corpus of web pages by importance, by determining the probability that a web surfer is on a page at any given time
- Calculated pageranks of individual pages using two methods: Sampling (modelling the corpus as a Markov Chain where change of state occurs randomly from a previous page) and Iteration (using the Pagerank formula)

Depocalypse | *React, Solidity, IPFS, Ethereum* | Project July 2021 – Aug 2021

- A decentralized NFT marketplace which lets users create their own NFTs and put them up in a marketplace. Functionalities include buying, selling, auctioning, and putting NFTs up for charity
- Contributed to the smart contract that stores NFT objects as structures, mints NFTs on IPFS, and emits events for creation of new NFTs, sale of NFTs and transfer of NFTs from one account to another

Tic-tac-toe | *Python, PyGame* | GitHub May 2021 – Jun 2021

- Developed a tic-tac-toe AI using the minimax algorithm with alpha-beta pruning
- Implemented the minimax algorithm to optimize the score for each player, at each step of the game
- Optimized the runtime of the algorithm using alpha-beta pruning, by terminating the evaluation of a move when it makes sure that it is worse than a previously examined move

Technical Skills

Languages: Python, Java, C/C++, HTML/CSS, JavaScript, SQL (Postgres)
Frameworks: Django, Flask, Numpy, Pandas, SASS, Markdown, Bootstrap, LaTeX
Developer Tools: Git, GitHub, GitHub Actions, VS Code, Figma, Heroku, Docker, Vim

Relevant Coursework

Computer Science: Programming(C/C++/Python/Java), Data Structures and Algorithms, Design and Analysis of Algorithms, Database Systems, Computer Architecture, Introduction to Automata Theory and Computability, Software Engineering, Computer Networks, Digital Design, Signals and Systems
Mathematics and Basic Sciences: Discrete Mathematics, Linear Algebra, Calculus, Probability and Statistics, Computational Chemistry, Physics
Social Sciences: Economics, History of Ideas, Technical Communication

Awards and Honors

2021 LiFT Scholarship, **The Linux Foundation**
Tezos India Fellowship, **Tezos India**
2020 Academic Excellence Award (Academic years 2017-18 and 2018-19), **Airport School, Ahmedabad**
2019 Student of the Year (Academic year 2017-18), **Airport School, Ahmedabad**
2017 NTSE Scholarship, **National Council of Educational Research and Training (NCERT)**

Presentations/Talks given

1. "Capacity Based Access Control and the Multiverse Framework"
   Web Science Lab, IIIT Bangalore, 27th April, 2021

Clubs and Extracurricular Activities

- **Google Developer Student Club (GDSC) - IIIT Bangalore:** Lead of the GDSC, where we use Google's technologies to spread awareness about open-source in our institute and improve the culture through a community that tries to solve real-world problems that people may face in their day-to-day lives
- **Zense:** Member of the Software Development Club, where I work on and coordinate on various projects undertaken by the club to solve real-world problems
- **Enigma:** Member of the Robotics Club, where I made an autonomous line-follower and an autonomous edge-avoiding robot using the Arduino microcontroller, and am currently studying drone simulations in MATLAB-Simulink
- **Parvaaz:** Team Lead of the Dramatics and Theater Arts Club. Our group act ended up 2nd at Pravega 2020, organized by IISc Bangalore
- **8Bit:** Member of the editorial team of the official magazine of IIITB
- **Yamini:** Anchored Yamini 2019, the annual dusk-to-dawn traditional music/dance confluence organized by SPICMACAY, IIIT Bangalore chapter