Vishwani Singh

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Education

Bachelor of Technology
Information Technology
CGPA: 8.52

Institute of Engineering and Technology
2017 – 2021

Professional Experience

Indian Institute of Technology, Delhi
Senior Research Fellow

New Delhi, India
Sep 2023–Present

- Collaborated with **AIIMS Delhi** on a project regarding analysis of effectiveness of tDCS Intervention on mental disorder.
- Researched and constructed a novel thresholding algorithm to binarize Functional connectivity matrix using small world network. This further helped in finding asymmetry, activity, region and differences between before-after results in brain alongwith differences in different kind of treatments.
- **Skills used:** Research conduction, Signal Processing, Graph Theory, Brain Functional Connectivity Analysis, statistics, Applied Machine Learning.

GeeksforGeeks
Software Development Engineer - 2

Noida, India
Apr 2023–Aug 2023

- Responsible for debugging, developing and optimizing **'write'** portal for internal team members to write posts(0.463M), improvements(0.59M), course posts(10.5K), editorials(1.7K) and media(40K).
- Managed **AWS S3** media restrictions for private and public buckets, ensuring private bucket for medias uploaded by unverified users ressulting in **avoiding company's copyright violations**.
- Created **scheduling and backdating publishing** feature on both 'write' and 'script' portal for automated content release as a sub process to remove third party WordPress service resulting into **50% publish API hits reduced**.
- Implemented **Django signals** to enhance recording activities related to posts and improvements leading to optimized storage, consistency and analysis of data.
- Utilized **RTK Query** to optimize data fetching, caching, readability and migrated frontend code to RTK.
- Implemented **Redis locks and Django atomic transactions** to ensure data consistency and prevent conflicts.

Software Engineer
Sep 2021–Mar 2023

- R&D **Elastic Search** for efficient data retrieval, improving posts search speed by 200%. Used **AWS opensearch** and configured production and development configurations. Improved both time efficiency and keyword search efficiency by 2.5x.
- R&D **Database (db) routing methods** for read and write operations for read (read replica of **AWS RDS** instance) and write databases (primary instance). Resulting into ensured redirection to corresponding db along with removing load and over costing from a single db.
- Responsible for debugging, developing, refactoring and optimizing **'script'** portal for internal team members to upload videos (5K), course videos (1K) and scripts.
- Developed and integrated **plugins in CKEditor** in phases.
- Developed **bulk operation** mechanisms in Django and frontend, enhancing user experience (UX) to select/update posts by quantifiable amount.

- Created numerous **population and backpopulation Django scripts**, ensuring consistency of data in legacy and recent features.

Projects and Internships

Chegg India   *Feb 2021-July 2021*
CSE Managed Network Expert
Solved 50+ doubts in core CSE subjects including OS, DBMS, Computer Networks, DSA, discrete mathematics.

Major Project   *Dec 2020-Mar 2021*
Human Activity Recognition using LSTM-RNN
Trained a bidirectional LSTM-RNN model on UCI HAR dataset with smartphones with 10K entries resulting in an accuracy rate of 89%.

Softpro India Pvt. Ltd.   *Nov 2020-Dec 2020*
Data Science Trainee
Created projects including sales analysis, categorization of Iris flower types, image recognition system, student marks predictor, Django web framework, etc.

Minor Projects   *May 2020-Sept 2020*
Guided ML projects
Heart disease predictor: Classification model used KN, Logistic Regression, Random Forest Classifier with Accuracy: 84%
Bulldozer price predictor: Time series model using Random Forest Regressor with Accuracy: 96%

Metro Apparels   *Jan 2018-Feb 2018*
Web Developer Intern and Content creator
Created static website along with content for retail.

Additional Courses

Introduction to Psychology (Coursera)	by Paul Bloom - Yale University
Computational Neuroscience (Coursera)	by Rajesh PN. . Rao - University of Washington
Zero to Mastery- Machine learning (Udemy)	by Andrew Ng
Python Data structures (Udemy)	by Joe James
The Art of doing Python (Udemy)	by Michael Eramo
Greedy Algorithm, MST, DP (Coursera)	by Tim Roughgarden - Stanford University

Technical skills

Neuroscience & AI	Neural Networks, DL, ML, Digital Signal processing, Network connectivity, Computational Neurosicence
Programming Langagues	Python, Django, DRF, React.js, Redux.js, RTK
Core CSE	Database Management System, Data Structure & Algorithms, Operating Systems
Services	Docker, ElasticSearch, Amazon AWS (S3, RDS, Opensearch), Redis