


Vishwani Singh

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Education

Bachelor of Technology

Bachelor's degree program

CGPA: 8.52

Institute of Engineering and Technology

2017 – 2021

Professional Experience

Indian Institute of Technology, Delhi

Senior Research Fellow

Sep 2023–Present

New Delhi, India

- 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

Apr 2023–Aug 2023

Noida, India

- 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 resulting 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.

GeeksforGeeks

Software Engineer

Sep 2021–Mar 2023

Noida, India

- R&D elastic search method leveraging **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 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 database thus, removing load and over costing from a single database.
- Responsible for debugging, developing, refactoring and optimizing script portal for internal team members to upload videos (5k), course videos (1k) and scripts (discarded feature as of now)
- Developed and integrated **editor plugins in CKEditor** as per requirements.
- 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 from old to new feature.

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 into 89% accuracy on test dataset.

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 projects including sales analysis, categorization of Iris flower types, image recognition system, student marks predictor, Django web framework, etc.

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 Neuroscience

Programming Languages

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