


# 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 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.

### 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 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