ISHAN BANSAL

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Education

Bachelors of Technology (Information Technology and Mathematics) 2020 – 2024
Cluster Innovation Centre, University of Delhi, India **CGPA 9.13**
Relevant Coursework: Calculus, ODEs and PDEs, Programming (C/C++), Discrete Math, Algebra, Data Structures, Operating Systems (Java), Complex Analysis, Probability, Artificial Intelligence, Game Theory, Linear Programming, Computation Structure and Logic, Networking.

Work Experience

Tata Digital Gurugram, India
Data Intern (Computational Data Science) June 2023 – July 2023
- Processed Kafka Streams in Flink via Docker and set up an initial stage to help migrate **TD's architecture** from Apache Nifi to Apache Flink.
- Extracted selected features from large CSV files using SQL in PySpark.
- Learnt about Apache Parquet files and Data Warehousing on Azure Databricks.

Concentrix Gurugram, India - Remote
Solutions Intern (NLP) July 2022 – October 2022
- Developed a dual-stage profanity-masking system, which would first censor inappropriate words using a **list of 900+ blacklisted words**, and then further check the input against **BERT trained on 180000+ tweets.**
- Learnt about the state-of-the-art AI models used in Natural Language Processing under Concentrix's Cognitive Customer Engagement.

AiView Delhi, India
Developer (CV) May 2022 – July 2022
- Developed AiView's Face Detection and Recognition Module using OpenCV.
- Face recognition is based on face encoding extracted from a single picture dismissing the need for a large training dataset.

F13 Technologies Delhi, India - Remote
AWS Intern (Cloud Computing) September 2021 – December 2021
- Designed architectures and implemented case studies such as **deploying a Windows VM** and **training a Semantic Content Recommendation System** on Cloud.
- Leveraged AWS like EC2s, S3 Buckets, Lambda, RDS and SageMaker to shift client's on-premises architecture to Cloud.
- Acquired **6 official AWS licenses** as part of my training.

Datacultr Gurugram, India - Remote
Software Developer Intern (Full Stack) June 2021 – August 2021
- Deployed a demo E-Commerce Website using Django connected at the backend with PostgreSQL.
- Automated debugging and reformatting data (CSV and JSON files) using Python Scripts for company's further use.
- Experimented with data scheduling and task queues using Django-Celery.

Projects

MyML [TensorFlow, PyTorch, JupyterLab/Google Colab]
- Created a repository for building a strong foundation of machine learning techniques.
- Experiments vary from **Fine-tuning BERT** for classification of questions to **Visualizing Filters of a CNN (VGG16)** using Tensorflow and Matplotlib.

Attendance System [OpenCV, Mediapipe, Tensorflow]
- Developed an automated attendance system which uses face recognition to mark the attendance of the students present.
- Integrated face-mask detection in the project adhering with the COVID-19 pandemic guidelines.

Alumni Website [Flask, MongoDB, GitHub]
- Designed, developed and tested the website along with its feature functionality. Worked closely with CIC's office and professors for gathering alum data and deploying our site.
- Led a team of 5 students to develop Cluster Innovation Centre's (CIC) *official alumni website*.

Solar PVT Research [Matlab]
- Analysed the effect of Carbon Quantum Dots on the maximum temperature with varying Packing Factor of the PV Module using Matlab simulations and plotting line-graphs.
- Solved linear equations using MATLAB to find maximum temperature reached in 24 hours for a double-still solar still.

Remote Sensing [ArcGIS]
- Analysed the Land Use Land Cover (LULC) for the city of Jaipur and its adjoining areas using LANDSAT images.
- Created False Color Composites (FCC) of the research area, and compared the spectral biplots of 2014 with 2022.

Publications

Improvement of Accuracy for Hate Speech Detection Using Modified Feature Extraction   November 2023
Bansal. I, Sood. M, *International Journal for Multidisciplinary Research*

Development of Synergic Deep Learning Model for Glioma Tumor Grading
Chopra. S, Sandhu. H, **Bansal. I**, Yadav. N, *Under Publishing*

Relevant Skills

Languages:	Python | C/C++ | Java | JavaScript | SQL | Latex
Frameworks/Libraries:	Tensorflow | PyTorch | OpenCV | SciML-Ecosystem | NodeJS
Platforms and Tools	Linux | Amazon Web Services | Google Colab | GitHub | VS Code | Docker | Matlab
Research Interests:	Machine Learning | Scientific ML | CV and NLP | Applied Computing

Positions of Responsibility and Achievements

○ Started **Summer@CIC**, fostering junior-senior interactions. Took more than 8+ hours of classes,   2023
teaching an intermediate level Python course to freshers.

○ **Design Head** of *Convoke 5.0*: University of Delhi's largest tech fest. Designed posters and social-media   2023
adverts using Canva and Figma.

○ **Gold Medalist** at Delhi Public School Sector-45 Gurugram for continuous academic performance.   2020 − 2013

○ **DELF A1 and A2**, awarded by the France's Ministry of Education   2018

Volunteering and Extracurricular Activities

○ Volunteered at an Indian NGO (Robin Hood Army, teaching Math, Physics and English to   2023 − 2021
underprivileged senior school students.

○ Appointed as a Student Ambassador at IIT Bombay, I leveraged social media platforms to campaign   2021
about various events happening at MoodIndigo, IIT Bombay's Cultural Fest.

○ Aimed at improving their lifestyle through education, I taught junior school Math to underprivileged   2015
students under the Shiksha Kendra Program organized by Delhi Public School Sector-45.

○ Organized, participated and won various soccer tournaments and friendly matches at Ryder's Sport   2020 − 2012
Academy.