Vibhuti Bansal

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Education

- **Bharati Vidyapeeth's College of Engineering** — New Delhi, India
  B.Tech in Computer Science; GPA: 9.22 — *Aug 2019 - July 2023*
- **Seth Anandram Jaipuria School** — Ghaziabad, India
  Class 12; 95.2% — Class 10; 10 CGPA — *2019—2017*

Skills Summary

- **Languages**: C++, Python, C, SQL, Dart, SQL
- **Libraries/Frameworks**: Jax, Flax, Tensorflow, Keras, SkLearn, OpenCV, Numpy, Pandas, Matplotlib, GeoPandas, FireBase, Flutter
- **Tools**: Git, Juptyer Notebook, VSCode, An- droid Studio, MySQL, Advanced Excel

Experience

- **IIT Gandhinagar** — Gandhinagar, India
  ML Research Intern : Google exploreCSR — *June 2022 - July 2022*
  - **Uncertainty in Neural Networks**: Developed framework to incorporate, evaluate and visualise uncertainty in Neural Networks (using bayesian and non-bayesian approximation) at the root level using Jax and Flax Link
  - **PML Book 2**: Rendered images for Dr.Kevin Murphy's Book II on Probabilistic ML, OpenSource
- **Ernst & Young** — Remote
  Data Analyst — *May 2022 - June 2022*
  - **ESR**: Simplified the workflow of automatic HTML parsing to Excel, Utilised Power BI and support APIs to create estimated travel time between two locations, Structured mapping between ESG and BRSR using SQL.
- **Innomatics Research Lab** — Remote
  Data Scientist — *April 2021 - July 2021*
  - **Basic Concept Training**: Implemented basic statistical concepts using Python, Worked on Hypothesis Testing,Understood aspects of EDA : Used QQ plots, Box Cox Transformation and IQR to understand the data Link
  - **Music RecSys**: As a team project we studied and developed a basic Music RecSys using Collaborative Filtering on a sample data provided

Research Projects

- **Custom Weighted Balanced Loss Function for Covid 19 Detection from an Imbalanced CXR Dataset**: **Accepted for 26th ICPR -** The paper proposes the bias weights in a Weighted Categorical Cross Entropy (WCCE), based on reducing both of the factors, i.e., class imbalance and intra-class variance from the dataset.
- **"I do not know": Quantifying Uncertainty in Neural Network Based Approaches for Non-Intrusive Load Monitoring** : **Accepted for BuildSys'22 -** This work explores recent advances in uncertainty for NN(s) and eval- uate 14 model variants on the publicly available REDD dataset and find that proposed models can accurately estimate uncertainty without compromising on traditional metrics. It proposes calibration methods and find they can improve the uncertainty estimation.
- **An enhanced deep convolutional neural network for classifying indian classical dance forms**: Model to classify images into 8 Indian Classical Dance Forms.It uses Image Truncated Thresholding and ResNet50 as base model. Link

Projects

- **GeoSis**: Conceptualised the website which makes location based prediction of annual forest cover. (Data : scraped from govt. sources for 20 years).Geographic Visual analysis dashboard was implemented to observe the NDVI change climate change over years.Link
- **Covact**: This tool helps us to identify priorities of need of vaccine in a city compared to others. Data Preprocessing, Feature selection, and unsupervised learning(KMeans) were used in a pipeline as the model design.Link

Extra Participation

- Vice Chairperson : Campus Blocks BVP (2021-2022)
- 1st Runner-Up : WIE HACK 3.0
- Finalist : EY Techathon 2