

Chandana Daggupati

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Personal Summary

I am a proactive, driven professional and a recent Postgraduate in Data Analytics from Dublin City University. With a solid Computer Science background, I am experienced in machine learning, data engineering, and software development through hands-on projects.

Education

September 2024 – August 2025: **M.Sc. Data Analytics (2:1, Second class honors – Grade 1)**, Dublin City University | *Dublin, Ireland*

- Modules: Statistical Data Analytics, Cloud Technologies, Data Management and Visualization, Artificial Intelligence, Data Analytics & Data Mining, Machine Learning.

September 2020 – June 2024: **B. Tech in Computer Science and Engineering**, Amrita School of Engineering | *Coimbatore, India*

- Modules: Data Structures and Algorithms, Operating Systems, Database Management Systems, Object-Oriented Programming, Machine Learning, Artificial Intelligence, Deep Learning, Computer Networks, Business Analytics.

Work Experience

January 2024 – April 2024: **Software Developer Intern** at Dev Rabbit IT Solutions | *Tirupati, India*

Technologies: React Js, Java Script, HTML, CSS

- Completed a front-end development internship at DevRabbit IT Solutions, building responsive and dynamic user interfaces using React.js, JavaScript (ES6) and real-time JSON data.
- Developed reusable components, implemented client-side routing with React Router, and ensured secure user input through robust form validation in a team-based e-commerce project.
- Gained hands-on experience with Git, agile development, and UI/UX design principles, enhancing problem-solving skills in real-world web application scenarios.

Projects

August 2025: **Robustness Meets Interpretability in Sarcasm Detection: A Transformer Ensemble Approach**

Tech Stack: Python, PyTorch, Hugging Face Transformers, Scikit Learn, BERT, ROBERTa, LSTM, SHAP

- The study proposed a transformer-based ensemble approach for sarcasm detection on the SARC dataset, achieving the highest overall performance with a Weighted Soft Voting Ensemble Macro F1-score of 0.784.
- This ensemble, composed of models including BERT, RoBERTa, and a noise-trained Perturbed BERT, provided high class consistency with F1-scores of 0.786 (Sarcastic) and 0.781 (Non-Sarcastic).
- Individual models like RoBERTa (0.781 Macro F1) and Perturbed BERT (0.770 Macro F1) demonstrated superior performance over traditional baselines, validating the robust training strategy.

April 2025: **Machine Learning Framework for Credit Card Fraud Detection**

Tech Stack: Python, XGBoost, Scikit Learn, SMOTE, ADASYN, SHAP, Pandas, NumPy, Matplotlib

- Developed an end-to-end fraud detection system using the CRISP-DM framework, combining advanced preprocessing, feature engineering, and resampling methods (SMOTE, ADASYN) to address severe class imbalance in credit card transaction data.
- Achieved a high-performing model (F1-score: 0.90) using XGBoost with SMOTE, outperforming baseline classifiers like Logistic Regression and Random Forest while explaining model transparency through SHAP-based interpretability.
- Engineered behavioral, temporal and statistical features to capture fraud signals, and validated the system using cross-validation and precision-recall metrics for robust performance on highly imbalanced datasets.

June 2024: **A Comparative Study of Hyperparameter Tuning in Deep Learning Models using Bayesian Optimization and Explainable AI**

Tech Stack: Python, ML Models, XAI - LIME

- The study compares CNN, ResNet50, MobileNet, InceptionNet, and RegNet models for detecting rice plant diseases, using Bayesian Optimization to tune hyperparameters like optimizer, activation, and batch size for improved accuracy and performance.
- The research uses LIME (Local Interpretable Model-Agnostic Explanations) to visualize and interpret how tuned hyperparameters influence model predictions, enhancing trust and transparency in deep learning models.
- MobileNet consistently showed the most balanced and robust results, while other models ResNet and InceptionNet had trade-off between recall and precision, reinforcing the value of Bayesian tuning combined with XAI for model refinement.

Skills

- **Languages:** Python, SQL, R
- **Data & Analytics:** Pandas, NumPy, Matplotlib, Seaborn, Power BI, PyTorch, Keras, TensorFlow
- **Data Engineering & Cloud:** AWS, Hadoop, Spark, Snowflake, Kubernetes, ETL Pipelines.
- **Software Development:** React.js, Node.js, JavaScript, C, C++, Git, Docker.

Achievements & Additional Information

- Placed among the top performers in the Etsy company's Machine Learning University Challenge.
- An active badminton and swimming enthusiast with interests in culinary innovation, photography, and music.
- Undertook part-time responsibilities as a dedicated Team Member at KFC, delivering friendly and efficient customer service, managing fast-paced front-of-house operations, processing orders with accuracy, packing food and handling till transactions.