ABHINAV GUPTA

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Available: May 2025 for Full Time | January 2025 for Spring Internship

EDUCATION

University of Southern California **August 2023 – May 2025**
Master of Science – Computer Science GPA: 3.75/4.0
Relevant Coursework – Machine Learning, Deep Learning, Natural Language Processing, Databases, Algorithms

Vellore Institute of Technology, India **July 2019 – April 2023**
Bachelor of Technology – Computer Science Engineering GPA: 9.05/10.0

SKILLS

Languages: Python (Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn), SQL, JavaScript, Flask (Streamlit), R-Programming
Data BI & Statistics: Power BI, Tableau, Excel, Regression Models, Feature Engineering, Time Series Analysis, Hypothesis Testing
Machine Learning: PyTorch, TensorFlow, HuggingFace, Transformers, Computer Vision, Neural Networks, Decision Trees
Databases & Tools: MySQL, SQLite, Oracle, Salesforce, Firebase, AWS, Snowflake, Apache Spark, ArcGIS

WORK EXPERIENCE

Esri – *Data Science Intern* **June 2024 – August 2024**
- Developed a forecasting model to analyze Esri Community health and forecast user behavior with 90% accuracy using Python-based regression algorithm and Excel, enhancing quarterly trend tracking and annual business project roadmap planning
- Optimized the retention model using Khoros API backend and advanced data visualization and statistical data analysis to identify friction points for Esri Community members, thereby helping the team build actionable workflows to increase member retention
- Compiled dynamic ad-hoc data intelligence insight reports for team directors and created automated data filtering pipelines for quicker reporting, which resulted in improved business agility, better internal collaboration & increased overall team productivity

Learn with Leaders – *Data Science Intern* **September 2021 – March 2022**
- Processed user engagement through data-driven analytics of 75,000+ students by leveraging SQL, Python, and its library eco-system to re-design old stale products and draft adaptive marketing strategies, resulting in 40% increase in organic website traffic
- Supported development of a dedicated performance dashboard to identify key customer trends and interests, aiding content team in designing lucrative events and courses for students, contributing to a 30% boost in acquired customers and 20% in revenue

Young Tycoons Business Challenge – *Co-Founder* **October 2020 – August 2021**
- Launched a global business competition fostering entrepreneurship with over 20,000 high-school participants, leading a team of 10 interns who developed a responsive website including a full-stack web portal for application submission and status tracking
- Created a data screening dashboard to manage applications, identify patterns, and optimize outreach to diverse demographics using PowerBI and Excel, further enabling ease of use and streamlining the valuation process of 500 applications for judges & mentors

PROJECTS

Enhancing Image Classification through Complex Regularization *(Project Link)* **January 2024 – May 2024**
- Compared ensemble regularization's effect on EffecientnetB0 vs a custom CNN model to reduce loss under limited quality data
- Applied data augmentation, dropout and L2 regularization to reduce overfitting and decrease validation loss from 2.35 to 1.98

Adding Symbolic Reasoning to LLMs using DSR *(Project Link)* **January 2024 – April 2024**
- Tested a new Differential Symbolic Reasoning architecture aimed at improving LLM's logical reasoning on kinship classification
- Achieved 75% better accuracy using classifiers like RoBERTa, XLNET or ELECTRA when integrated with DSR-LM framework

Application of NLP in Aviation and Runway Safety *(Project Link)* **September 2023 – December 2023**
- Developed a BERT-model to identify & categorize human situational factors causing runway incursions in US aviation industry
- Extracted 47,000 filtered reports using NASA's ASR System and applied targeted cluster indexing to root 6 key fracture points

HONORS AND AWARDS

Developer: Esri Intern Hackathon 2024 – 1st Place **July 2024**
- Competed among 15 teams and developed EasyAisle, an indoor navigation system for grocery stores aimed at helping door-dashers by consolidating multi-app orders and optimizing shortest route using ArcGIS Pro, Kotlin, and Firebase in under 36hrs.

Co-Author: Analyzing Sentiment Analysis Using Supervised Learning *(DOI)* **November 2022 – May 2023**
- Conducted sentiment analysis on 140,000+ records, applying 7 ensemble classification algorithms. Achieved high performance, 86.6% accuracy and 85.3% precision, by integrating all model predictions using a majority probability Voting Classifier.

District Representative: Rotary International **April 2018 – August 2021**
- Coordinated 20+ humanitarian projects like tree plantations, donation drives, blood & plasma donation camps with over 2500 donors. Crowd-funded 4000 USD for distribution of 3D printed face-shields to frontline workers in COVID-19.