Karthik Mettu

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Professional Summary

Data Analyst with hands-on experience delivering statistical and AI-driven solutions in public health, education, and NLP. Proven success in automating workflows, building ETL pipelines, developing dashboards, and deploying machine learning models with 85%–95% accuracy. Strong in hypothesis testing, regression modeling, and stakeholder engagement. Skilled at translating complex datasets into actionable insights, collaborating with cross-functional teams, and communicating findings to technical and non-technical audiences.

Technical Skills

Languages/Tools: Python, SQL, R, SAS, SPSS, MySQL, Snowflake, AWS S3, BigQuery, Tableau, Power BI, Excel, Git, Power Query, DAX

Frameworks/Techniques: Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, Matplotlib, Seaborn, Machine Learning, Statistical Modeling, A/B Testing, Regression, Time-Series, Text Mining, NLP, Data Storytelling, Feature Engineering, ETL

Education

University of Houston Houston, TX

M.S. in Statistics and Data Science Aug 2023 – Dec 2024

GPA: 3.74/4.0

Professional Experience

Data Analyst American Red Cross, Houston, TX

May 2024 – Present

- Built an AI agent with Azure PromptFlow to automate 500+ monthly receipt analyses, saving 10 hours/week and reducing manual effort by 85%, yielding $10K monthly savings.
- Designed and launched Tableau dashboards for disaster response KPIs, improving operational efficiency by 15% and supporting cross-functional decision-making.
- Collaborated with Disaster Action Teams and stakeholders to align data science initiatives with emergency response operations and KPI tracking frameworks.
- Implemented Snowflake-based ETL workflows to streamline data preparation and enable automated weekly reporting for stakeholders.

Instructional Assistant University of Houston, Houston, TX

Aug 2023 – Dec 2024

- Facilitated 30+ sessions for 50+ graduate students on regression, hypothesis testing, Bayesian inference, and statistical computing using real-world datasets.
- Led weekly Python-based labs covering data wrangling, visualization, and modeling with Pandas, NumPy, Matplotlib, and Scikit-learn.
- Mentored students on applied data science and data storytelling, achieving 100% course completion and 85% student performance above 90%.

Projects

Sentiment Classification with Transformer Models Oct 2024 – Dec 2024

- Built Bi-LSTM and Transformer models for classifying emotions in 1M+ Twitter posts; achieved 95% accuracy in real-time sentiment detection.
- Applied tokenization, sequence padding, and pipeline optimization with TensorFlow and PyTorch, reducing model training time by 40%.

Diabetes Risk Modeling and Prevention Strategies Jan 2024 – Apr 2024

- Developed predictive models using logistic regression and random forests to identify key diabetes risk factors with 85% accuracy.
- Highlighted hypertension and heart disease as major predictors, providing actionable insights and supporting data-driven decisions in public health.

Suicide Rate Modeling Using Global Economic Indicators Oct 2023 – Dec 2023

- Performed multivariate regression on global suicide data; found 5.4% suicide risk correlation with economic downturns ($R^2 = 0.85$).
- Applied ARIMA and Prophet for time-series forecasting to support mental health policy recommendations and stakeholder reporting.

Certifications

AWS Certified Cloud Practitioner

Microsoft Certified: Data Analyst Associate (Power BI)