# Surya Vegesna

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## Work Experience

**Graduate Research Assistant** | Jan 2023 – Present
*Cox Media* | *Atlanta, GA*

- Collaborated with Cox Media to enhance advertising slot allocation, leveraging **machine learning** techniques to optimize Ad placement strategies and drive revenue growth.
- Conducted **EDA** on 6 weeks of **historical data**, uncovering key relationships and trends that informed subsequent modeling and decision-making processes.
- Pioneered with a team to engineer **2 advanced analytics features**, leveraging insights from **15+ audience demographics** to identify spot IDs with highest net value and optimize ad slots, boosting ad placement efficiency by **30%**.
- Developed **K-means Clustering**, **Time series analysis** to understand how various factors influence the success of an advertisement, collectively enhancing the precision of ad targeting and engagement by over 20%

**Graduate Research Assistant** | Aug 2023 – Dec 2023
*J.Mack Robinson College of Business* | *Atlanta, GA*

- Led a team of 5 graduate researchers in a customer **sentiment analysis** for a hypothetical airline, analyzed customer sentiment from textual reviews to identify pain points of customers and suggested areas of improvement for the airline.
- Developed a **web scraping** script using python to collect 30,000 customer reviews for airlines and employed **data preprocessing** techniques to handle missing values, stop words and special characters, ensuring accuracy for further analysis.
- Performed **EDA** to understand customer sentiments, utilized **TF-IDF** vectorization for text analytics and optimized clustering by dividing the text into 14 clusters using the elbow method to accurately identify customer pain points.
- Applied **Natural Language Processing** using **KeyBert** and **LLama2** to extract meaningful insights from customer reviews, highlighting key areas of **customer satisfaction** and areas for improvement.

**Associate Data Scientist** | July 2021 – Aug 2023
*Tata Consultancy Servies - AIG(Client)* | *Hyderabad*

- Contributed to optimizing data-driven solutions for the **Fixed Annuity Team** ,enhancing **OPS Efficiency** project by 10%.
- Supported the development of a **predictive maintenance model** for operational systems, which played a part in reducing **application downtime** by 15% and enhancing service reliability.
- Participated in the implementation of **Random Forest** and **Gradient Boosting** models in the Transaction Clearing House application, aiding in improving **Risk Assessment** accuracy.
- Automated data tasks, including data cleaning, monitoring, and report generation using **Python**, resulting in increased proficiency.
- Created and maintained 10+ **Tableau** dashboards under senior Data Scientists, enhancing data accessibility for stakeholders and facilitating informed **data driven decisions**.

## Projects

**Numerical Prediction Model to Forecast Temperature - GitHub Link** | Nov 2023 – Dec 2023

- Spearheaded a predictive analysis using **multi-linear regression** on a dataset of **700k** records to forecast Seoul's maximum temperature, achieving an **RMSE** of 1.4069 on validation.
- Improved model performance by engineering a new feature, AverageCC using **LDAPS** CC features, reducing RMSE to 1.4069 on validation data and **1.49 on test data** after variable categorization.

## Technical Skills

**Coding Languages:** Python, R, SQL.
**Databases:** : MySQL, Big Query, Mongo DB, Postgre SQL
**Data Visualization:** : Tableau, Matplotlib, Seaborn, Plotly, Excel
**Modules & Applications:** Pandas, NumPy, Scikit-learn, Tensor Flow, NLTK, Jupyter, GIT, Docker, Microsoft office
**Big Data&Cloud:** AWS Cloud, GCP Big Query, HDFS, Map Reduce, Apache Spark.
**Machine Learning:** Linear & Logistic Regression, Decision Trees, SVM, K-Means Clustering, Hierarchical Clustering, NLP, statistics and data analysis, Topic Modeling, Sentiment Analysis, Random Forest, Deep Learning.
**Certifications:** Data Scientist Associate, Excel to MYSQL, AWS Cloud Concepts.

## Education

**Georgia State University** | Aug 2023 – Dec2024 (Expected)
*Master of Science in Data Science and Analytics* | *Atlanta, GA*

**Vel Tech University** | Jul 2017 – May 2021
*Bachelor of Science in Computer Science and Engineering* | *India*