SHIVANI KOTIAN

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EDUCATION

California State University, **Los Angeles, USA**
Master of Science in Computer Science GPA: 3.93.0/4.0 *Jan 2023 - Dec 2024*

PES University, **Bangalore, India**
Bachelor of Engineering in Computer Science GPA: 3.6/4.0 *Aug 2016 - Sept 2020*

WORK EXPERIENCE

Graduate Research Assistant, California State University **Los Angeles, USA**
Part-Time *Jun 2023 – Dec 2024*

- Conducted performance analysis of object detection CNN models on NVIDIA Jetson-Orin, Intel NUC, and Raspberry Pi, processing datasets of 10,000+ images to evaluate computational efficiency for real-time IoT systems.
- Assessed training time, inference time, and hardware utilization metrics to validate suitability for UAV-assisted ITS applications.
- Published findings in IEEE CCNC 2025 - IIWoT Workshop, addressing QoS challenges in resource-constrained environments.

Data Scientist, Ernst & Young **Bangalore, India**
Full Time *Oct 2020 – Jan 2023*

- Improved FMCG sales volume prediction accuracy by 15% through feature selection and implementing models like ARIMA, Croston, Prophet, RandomForest, and XGBoost using Scikit-learn for time series data.
- Conducted EDA on 500GB+ datasets to validate consistency, uncover patterns, and optimize models by integrating insights on seasonality, supply issues, and COVID-19 impact.
- Reduced processing time by 70% by managing the end-to-end model lifecycle on Microsoft Azure and leveraging PySpark to handle and analyze datasets exceeding 1TB, enabling faster and more efficient big data manipulation.
- Handled ad-hoc data analysis requests, created Root Cause Analysis reports and Key Performance Indicators(KPI) dashboards on PowerBI, providing stakeholders with actionable insights.
- Awarded EY Kudos! in June 2021 and 2022 for exemplary performance and commitment to excellence.

PROJECTS

CodeSage: Multi-Modal Question-Answering System *Fall 2024*

- Developing a multi-modal question-answering system using Retrieval-Augmented Generation (RAG) to extract insights from a software engineering textbook by chunking text, summarizing tables, and applying OCR.
- Leveraging LangChain and ChromaDB for efficient vector-based retrieval and implementing an interactive Streamlit UI for real-time query responses.
- Tools: Python, LangChain, ChromaDB, OpenAI, Tesseract OCR, PyPDF2, Streamlit, Unstructured, RAG.

Decoding Dreams: A Data-Driven Dive into Sleep Efficiency, *Spring 2024*

- Analyzed the "Sleep Efficiency" dataset to explore factors affecting sleep quality.
- Used various data visualization techniques to identify patterns and correlations in sleep data, including metrics like age, gender, sleep duration, and lifestyle factors.
- Tools: Tableau for data visualization, Microsoft Excel for data storage, and Python for data cleaning.

CerebroVision: Advanced CNN Diagnostics for Brain Tumor Identification, *Spring 2024*

- Employed transfer learning with ResNet50, VGG19 and designed CNNs for classification of brain tumors from MRI images.
- Achieved 99.88% accuracy and 99.98% AUC, significantly outperforming traditional architectures with lower loss.
- Tools: Python, TensorFlow, Keras, Scikit-learn, Seaborn and Weights & Biases (wandb) for tracking model performance.

EXTRA-CURRICULAR ACTIVITIES

Diversity and Inclusion Officer – Associated Students. INC, Los Angeles, USA *2023-24*

- Advocated for inclusion and equity bills in higher education at the CHESS conference by engaging with legislators from district 14 on behalf of California State Student Association (CSSA).

AI/ML Lead – Google Developer Student Club, California State University, Los Angeles *2023-24*

- Organized workshops and events to meet the specific needs and interests of club members, while the club earned points based on its event participation, contributing to its recognition within the GDSC community.

SKILLS

Python, R, SQL | Microsoft Azure, Databricks, Matplotlib, Seaborn, Excel, Tableau. | Hadoop, Spark, Kafka | NLP, scikit-learn, Pytorch, Keras, TensorFlow, LLM, Regression, Classification, Clustering, Descriptive and Inferential statistics, Time series analysis, Univariate and multivariate analysis, Predictive Modeling, A/B testing, Hypothesis testing, Bayesian testing. | Languages: Advance - English, Hindi.