KRITI SHUKLA

+1 xxx-xxx-xxxx | kas140472.github.io/myWeb | linkedin.com/in/kriti-shukla-258396182/ | kritishukla0114@gmail.com

DATA SCIENTIST

Data Scientist | Machine Learning Engineer | Data Analyst | Business Intelligence (BI) Analyst | Quantitative Analyst | Data Engineer | Predictive Analyst | NLP Engineer | Software Engineer

Education

University of Southern California, Los Angeles, CA Dec 2024
Master of Science in Computer Science *GPA: 3.80/4.0*

Relevant Coursework: Machine Learning, Data Analytics, Web Technologies, Operating Systems, Computer Networks, Algorithms Analysis, Database Systems, Information Retrieval and Web Search Engines, Scientific Computing

National Institute of Technology Karnataka (NITK Surathkal), India May 2022
Bachelor of Engineering, Mechanical Engineering (Minor in Computer Science) *GPA: 9.65/10.0*

Experience

Data Science Intern | ***Ford Motor Company, Michigan*** May 2024 - Aug 2024

- Contributed to Ford's Electric Vehicle (EV) Charging Taskforce by developing and optimizing data pipelines for handling big data on Google Cloud Platform (GCP) using BigQuery SQL and Dataform, reducing query runtime by 50%.
- Expanded analytics capabilities to a global scale by analyzing Germany's EV charging data, extracting critical insights to enhance the public charging experience.
- Conducted topic-wise sentiment analysis on charging station reviews, explored advanced Aspect-Based Sentiment Analysis (ABSA) techniques, and improved the user sentiment dashboard.
- Led the annotation of user reviews for model training data, using Python to calculate agreement scores; facilitated consensus-building meetings, improving consistency by 12%.
- Improved data accuracy and integrity by resolving discrepancies in the data pipeline, ensuring high-quality, real-time insights for executive decision-making. Applied data transformation techniques to automate data collection and processing.
- Collaborated with cross-functional teams using Agile methodologies and tools like Rally and Jira to track work, manage user stories, and drive operational efficiencies through iterative development.

Data Science Intern | ***LISUS Energy, Los Angeles*** Jun 2023 - Jul 2023

- Analyzed remote-sensing satellite data using Python, Pandas, Numpy, and Matplotlib, contributing to a data-driven tool for sustainable exploration of critical minerals.

Software Engineer Intern | ***Caterpillar Inc., India*** May 2021 - Jul 2021

- Collaborated with a team to develop an Ignition Delay Prediction Model for Compression Ignition engines, leveraging Python and Cantera to enhance engine failure analysis.
- Applied data engineering techniques to manage and analyze large volumes of engine test data using Pandas, Numpy, and Matplotlib, improving data processing accuracy and enabling data-driven decision-making.
- Rectified Ignition Delay Prediction discrepancy within company's proprietary software, leading to more reliable engine performance insights.
- Streamlined code for over 50% reduction in runtime, optimizing the performance of the engine analysis software and improving overall program efficiency.

Software Engineer Intern (Team Lead) | ***Virtual Labs, NIT Karnataka, India*** Nov 2020 - Jan 2021

- Led a team of three in the design and development of 12 interactive simulations for Engineering Thermodynamics, using HTML5, CSS3, and JavaScript to create engaging and educational tools.
- Applied software development best practices and Agile methodologies to ensure the timely delivery and quality of simulations, enhancing the learning experience for students.
- Developed online tools that facilitated remote learning and improved accessibility to engineering concepts, fostering a hands-on approach to learning through visual animations and dynamic content.

AP Computer Science Teaching Assistant | ***Microsoft TEALS, Los Angeles*** Sep 2023 - Present

- Supported the instruction of 30 AP Computer Science students at Marco Antonio Firebaugh and Lynwood High Schools by facilitating coding sessions, troubleshooting technical issues, and adapting lesson plans to meet diverse student needs.
- Collaborated with educators to enhance the learning experience, provide clear explanations of complex programming concepts, and foster a positive and engaging classroom environment.

Projects

U.S. Presidential Election Prediction Model (In Progress)

- Developing a predictive model to forecast the outcome of the U.S. presidential election by analyzing historical election data, current polling trends, economic indicators, and social media sentiment. Utilizing machine learning techniques to build and refine the model, with ongoing efforts to achieve high accuracy and reliability.

Single Track Deposit Geometry Prediction Model

- Led a team of four in developing machine learning models with 98% accuracy to predict single-track deposit geometry for Laser Directed Energy Deposition, enhancing additive manufacturing quality.
- Applied data engineering techniques including data pre-processing (randomization and normalization), hyper-parameter optimization, and feature importance analysis to improve model performance and ensure accurate predictions.

Multi-Class and Multi-Label Classification & Clustering Analysis

- Implemented multi-class and multi-label classification on the Anuran Calls dataset using SVMs with Gaussian and L1-penalized kernels, applying techniques like SMOTE for class imbalance and evaluating performance with metrics such as precision, recall, and AUC.
- Conducted K-means clustering on the same dataset to identify clusters and evaluated clustering accuracy by calculating Hamming distances and scores between true labels and cluster assignments.

Class Imbalance and Model Evaluation

- Applied data imputation and coefficient of variation (CV) for feature selection on the APS Failure dataset, trained and evaluated Random Forest and XGBoost models with and without SMOTE for class imbalance, and analyzed performance metrics including confusion matrices, ROC, AUC, and cross-validation.

Decision Trees and Regression Models Analysis

- Built and pruned decision trees for the Acute Inflammations dataset, converted decision rules into IF-THEN rules, and performed data imputation, correlation analysis, and feature selection for the Communities and Crime dataset; fitted and evaluated linear, ridge, LASSO, PCR, and boosting regression models with cross-validation.

Skills & Technologies

Python, C, C++, HTML, CSS, JavaScript, Java, R, MATLAB, SQL, MongoDB, NoSQL, Data Pipelines, Data Management, Data Engineering, Analytics, Big Data, Machine Learning, Natural Language Processing (NLP), Sentiment Analysis, Tableau, PowerBI, Cloud Platforms (AWS, Google Cloud Platform, BigQuery), Advanced Excel (Pivot Tables, Macros), Advanced Data Analysis, Pandas, Numpy, Scikit-learn, Matplotlib, Seaborn, Visualization, Statistical Modeling, Predictive Modeling, APIs, Version Control (Git/GitHub), Flask, JSON, AJAX, React, Node.js, Express.js, Bootstrap, Linux/Unix, Keras, TensorFlow, Agile Methodologies

Certificates: Google Cloud Big Data and Machine Learning Fundamentals (June 2024), IBM Data Science Professional Certificate (In Progress)

Awards and Honors

- **Society of Women Engineers (SWE) Los Angeles Graduate Scholarship Winner** | 2024
  Awarded a scholarship by SWE-LA for demonstrating high academic ability, campus involvement, engineering experience, volunteering roles and a commitment to leadership in engineering.
- **USC Scholarship** for Participation in Grace Hopper Celebration (GHC'23) and Society of Women Engineers Conference (WE'23) | 2023
- **Institute Gold Medal** | 2022
  Awarded for securing the highest GPA in Mechanical Engineering (Bachelors degree).
- **1986 Batch Gold Medal & Prof. Shuichi Torii Gold Medal** | 2022
  Recognized for outstanding academic performance and the best academic record in the Bachelors program.
- **Best Outgoing Student Award** | 2022
  Honored by the NITK Surathkal Alumni Association for exceptional contributions and achievements as a graduating student.

Leadership and volunteer experience

- **USC Viterbi Graduate Orientation Leader** | Jun 2023 - Present
  Led and facilitated orientation for new graduate and undergraduate students at USC Viterbi, delivering presentations on student life, organizing campus-wide events, managing check-in and event logistics, and providing specialized training on inclusive practices and being a prosocial upstander, while actively fostering community and student engagement.
- **Marketing Director & Webmaster, USC Women in Engineering** | Mar 2023 - Present
  - Led event promotion and marketing efforts, including creating engaging content for social media platforms and managing the website. Migrated the website to a new CMS platform, adding new features.
  - Acted as the liaison between WIE and the Viterbi Graduate Student Association (VGSA), facilitating communication and organizing joint events.