SUJITHA RAVICHANDRAN
| (346)-542-2912 | sravich8@cougarnet.uh.edu | www.linkedin.com/in/sujitharavichandran/ | https://sujims22.github.io/sujitharavichandran/
www.github.com/sujims22

EDUCATION

Master's in Engineering Data Science *Aug 2022- May 2024 (Expected)*
University of Houston, Cullen College of Engineering, Houston, Texas **GPA:** 3.95/4
Visiting Graduate Student *Aug - Dec 2023*
Rice University, Houston, Texas **GPA:** 4/4
Bachelor's, Major in Materials Science and minor in Computer Science *Aug 2018 - June 2022*
National Institute of Technology Tiruchirappalli, India **GPA:** 3.57/4
Graduate Coursework: Introduction to Machine Learning, Probability and Statistics, Text mining, Database Management system, Cybersecurity Data Analytics, Deep Learning, Information Visualization, Data Science Capstone Project, Data Structures and Algorithms, Network Security, Operating Systems, Data Communication and Networks, Big Data Analytics

KEY SKILLS

Languages: SQL, Python, C/C++, PHP, HTML, CSS, CUDA
Tools: Git, OpenCV, Tableau, Power Bi, Docker,
Web Frameworks: Streamlit, FastAPI, Flask
Machine Learning Frameworks: NumPy, Pandas, Scikit-Learn, Keras, PyTorch, TensorFlow,
Big Data: Hadoop, PySpark, Apache spark
Cloud: Amazon web services (AWS), Microsoft Azure, Google cloud platform (GCP)

EXPERIENCE

Data Processing, Analytics, and Data Visualization Specialist- Mata Inventive, Los Angeles, CA *Aug – Dec 2023*

- Retrieved and analysed business data from website APIs, employed pandas for data cleaning and transformations, then utilized SQL for efficient insertion into the database, resulting in a 30% increase in data processing efficiency.
- Designed and implemented interactive data visualization dashboards with Tableau integrating data from SQL databases to deliver actionable insights to stakeholders.
- Conducted A/B testing and statistical analysis, to systematically enhance key performance indicators (KPIs), achieving a 15% improvement through targeted data-driven optimizations.
- Engineered advanced, dynamic visualizations using PHP, incorporating cleansed and processed SQL data to effectively represent machine monitoring and inventory trends.

Graduate Research Assistant – University of Houston, Houston, Texas *Jan - Aug 2023*

- Fine-tuned Transformer-based LLMs from Hugging Face, significantly enhancing computer vision capabilities and surpassing baseline image translation accuracy by 15%.
- Conducted a comparative architectural study of various AI Transformer models including BERT, GPT-2, and RoBERTa, to identify optimal structures for specific AI tasks.
- Streamlined the AI training pipeline by optimizing attention mechanisms, resulting in a 20% faster model training time without compromising performance.
- Applied expertise in AI to expand Transformer technology applications, adapting and fine-tuning models for NLP tasks such as text classification, sentiment analysis, and language generation.

Computer Vision Research Engineer- Indian Institute of Technology Hyderabad *July 2021 - Aug 2022*

- Fine-tuned the YOLO (You Only Look Once) and Mask R-CNN object detection models to identify facial features within datasets, achieving an accuracy rate of 78%, which underscores my specialization in computer vision and model optimization techniques.
- Leveraged precise key point detection on faces within images using YOLOface, significantly advancing our visual analysis capabilities and contributing to the development of cutting-edge image recognition solutions.
- Contributed to the creation of ClarifyNet, a neural network for image dehazing, achieving top performance on various datasets. ClarifyNet, using EfficientNet-B6, boasts 18M parameters and processes images at 8 fps.

PROJECTS

- **DREAM-R: Genomic Analytics python package for detection of AMD Disease.**
  Skills : Python, Genomic Data Analysis, Machine Learning, Feature Engineering, Data Preprocessing, Statistical Analysis, Collaborative Development.
  Contributed to the development of 'DREAM-R', a Python package for genomic analytics focused on Age-related Macular Degeneration (AMD). This tool leverages advanced machine learning techniques to unveil critical genomic signatures of AMD
- **Natural Language Processing with Disaster Tweets.**
  Skills: Natural Language Processing, Machine Learning, NLTK, BERT, Text Mining, Sentiment Analysis, Data Annotation.
  Developed a machine learning model to authenticate disaster-related tweets. The goal was to improve emergency response and crisis management with a reliable tweet authentication model.
- **Semantic Segmentation of Building Damage.**
  Skills : Deep Learning, Convolutional Neural Networks (CNNs), Transformer Models, Semantic Segmentation, Image Processing, Team Collaboration.
  As part of a group project, I worked on employing CNN and transformer models for the semantic segmentation of building damage from the 2017 Mexico City earthquake.
- **Facial Landmark Analysis and Anomaly Detection.**
  Skills: Computer Vision, Facial Landmark Detection, OpenCV, Image Analysis, Anomaly Detection, Biometric Analysis.
  Focused on facial landmark analysis for applications in medical diagnosis and cosmetic surgery planning. The project involved calculating various facial angles and ratios for anomaly detection.
- **Tableau Dashboard Projects.**
  Skills: Data Visualization, Tableau, Interactive Dashboard, Data Interpretation, Market Knowledge, Revenue Analysis
  1. Global GDP Growth Overview (2000-2010) - Created an interactive Tableau dashboard visualizing global GDP trends over a decade.
  2. US Car Auction Analysis - Crafted a Tableau dashboard analyzing US car auction market trends and preferences
- **Classification of Internet Firewall Dataset**
  Skills: Cybersecurity, Anomaly Intrusion Detection, Data Analysis, Machine Learning, Model Integration, KNN, SVM, Logistic Regression, Decision Trees.
  Developed an advanced network intrusion detection system using the KDD Cup 1999 dataset. This system integrates various models like KNN, SVMs, and Logistic Regression, enhancing the accuracy in network anomaly detection.