# SHREERAM GUDEMARANAHALLI SUBRAMANYA

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## EDUCATION

**State University of New York at Buffalo, United States** August 2021 - February 2023
Master of Professional Studies, Data Science and Applications

**The National Institute of Engineering, Mysore** August 2016 - May 2020
Bachelor of Engineering, Computer Science Engineering

## SKILLS

- **Programming Languages:** Python 3, R, JavaScript, Scala, C, C++, Java
- **Databases:** SQL Server, MySQL, PostgreSQL, MongoDB
- **Machine Learning Tools:** Pytorch, Tensor Flow, Keras, Pandas, Sci-kit learn, Seaborn, Data Mining, Web Scrapping
- **Tools:** Visual Studio, Talend Data Integration, Apache Spark, Tableau, Jupyter, Google Colab, GCP, Git, Lucidchart, Miro, Excel

## EXPERIENCE

**Research Assistant | Center for Unified Biometrics and Sensors Lab (UB)** December 2022 – Present

- NSF CITER Grant | Developed a spatio-temporal multimodal network, to learn the elastic difference between a live and fake finger, by focusing on intentional distortion induced through motion during fingerprint acquisition. Paper submitted to IEEE FG
- Created a novel dataset (GestSpoof) of 1 million fingerprint images and conducted quantitative analysis of live and spoof images
- Proposed a spatio-temporal multimodal video classification approach using **PyTorch** video-based transformer and **NIST minDTCT**
- Implemented CNN models for both static image and dynamic video-based classification using focal loss, achieving a 92% accuracy
- Generated a synthetic fingerprint dataset of 2.4 million using directional kernels and Gabor-like space-variant filters to improve contactless fingerprint recognition

**Data Scientist| Cognitron Technologies** May 2020 – July 2021

- Developed an Education CRM tool to improve student engagement in public schools, saving 100 hours/week
- Established A/B testing framework for student engagement tool, including hypothesis development, test group segmentation, and statistical significance testing, resulting in a 10% increase in overall student engagement
- Designed multiple classification and regression models to improve student performance monitoring. Utilized historical student grades to determine pass/fail probabilities, and benchmark region-level school ranking.
- Collaborated with data engineers to automate ETL/ data Integration from multiple source points using Talend. Developed and optimized SQL queries to perform data extraction to fit the analytical requirements
- Configured a CI-CD pipeline using GitHub actions to automate the updation of Tableau dashboards and Talend delimited files

## ACADEMIC PROJECTS

**Depression Detection from social media platforms:** Python 3, Sci-kit learn, Plotly, Pandas, NumPy May 2022 – August 2022

- Led a team of 5, scrapped data from various social media platforms such as Reddit, and Twitter, using **snscrape** and **Reddit API**
- Transformed unstructured data to a structured format by extracting relevant information such as text, mentions and timestamps
- Pre-processed 15,00 suicide posts dataset by removing hashtags, links and evaluated Lemmatization and Stemming techniques
- Performed **content analysis** (topic modeling, sentiment analysis, topic distribution) and visualized the data using Plotly
- Devised a binary classifier model using feature selection techniques like XGBoost, SVM, and Random Forest to differentiate between suicidal and non-suicidal social media posts

**US House Rent Predictor:** Python 3, Kaggle, MySQL, Streamlit, Seaborn, January 2022 – May 2022

- Standardized and Preprocessed 75,000 US property listings, loaded into a SQL database for analysis. Employed regression models (Linear, Decision Tree, Gradient Boosting) to identify optimal models for the data
- Developed a **Streamlit** web application to display predicted house rental prices based on input house attributes

**E-wallet Money Transaction System** February 2020 – May 2020

- Built a responsive web application with dashboards from Materialize, ExpressJS, JavaScript, HTML5, and CSS deployed on GCP
- Developed restful APIs using JSON and established a seamless connection with the SQL database. Created respective indexes to optimize query performance and improved the efficiency of transaction history retrieval

**Pneumonia Detector by Chest X-Ray**: Python 3, Keras, Open CV September 2019 – February 2020

- Classified pneumonia in chest X-ray images using deep learning (ResNet_50, VGG) and evaluate the performance
- Published paper in the International Journal of Engineering Science and Computing (**IJESC**)

## CERTIFICATIONS

- AZ-900: Microsoft Azure Cloud Fundamentals | Microsoft | January 2023