Girish S. Wangikar

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EDUCATION

North Carolina State University, Raleigh, NC, USA   **Aug 2022 – May 2024**

Master of Science in Electrical and Computer Engineering   **GPA : 3.95/4.0**

- Relevant Coursework: Advanced Machine Learning, Special topics in Data Science, Neural Networks and Deep Learning.

Rajarambapu Institute of Technology, Maharashtra, India   **Jul 2018 – Jul 2022**

Bachelor of Technology in Electronics and Telecommunications Engineering   **GPA : 3.83/4.0**

- Relevant Coursework: Machine Learning, Data Science, Python Programming, Artificial Intelligence.

SKILLS

Programming Languages: Python (Proficient), SQL (Fluent), R (Fluent), C++ (Intermediate)
Frameworks and Libraries: TensorFlow, Django, NLTK, OpenCV, Scikit-learn, Pandas
Softwares and Tools: Tableau, PowerBI, Apache Spark, AWS, Docker, Kubernetes, Git, MATLAB
Technical Proficiencies: Strong Mathematical Skills (Statistics, Probability Theory, Geometry) and Knowledge of Core Machine Learning Methods, Agile/Scrum Methodology

WORK EXPERIENCE

Research Assistant, *Sozzani Lab, Raleigh, NC*   **May 2023 – Present**

· Assisting in the ongoing development and implementation of **auto-encoder** neural networks for analyzing genomic data in the context of gene regulatory networks to further enhance accuracy over previous methods.

· Continuously conducting data gathering, sorting, and analysis of **10,000+** genomic data samples using **R** and Excel to ensure the ongoing quality and usability of genomic data for further investigation.

· Currently involved in the development of an **RNN** framework specifically tailored for predicting phosphatases in plant genomes, aiming to further improve the team's ability to identify and understand the function of these important genes.

Machine Learning Intern, *Exposys Data labs, India*   **Jan 2022 – Mar 2022**

· Conducted **ETL** operations on **500GB** of raw data and created data visualizations utilizing **Tableau** to support data driven decision making.

· Designed and trained Object Detection model using **TensorFlow**, achieving high accuracy and F1 performance metrics.

· Deployed the Machine Learning model as an API employing Django and Python, resulting in a 24% improvement in performance and efficiency and collaborated with team members engaging **Agile** software development methodologies.

ACADEMIC PROJECTS

Deepfake Detection using Pairwise Learning – Python (TensorFlow, PyTorch) :   **Present, NCSU**

· Generated **120K** fake images from CelebA real image dataset for different Generative Adversarial Networks (**GANs**).

· Trained Common Fake Feature Network (CFFN) and Classification Network (CN) on datasets for fake/real images.

· Analyzed performance of the model: **Accuracy - 99.37%, F1 Score – 98.97%.**

Terrain Identification using LSTM – Python (TensorFlow) :   **Feb 2023, NCSU**

· Applied Bidirectional **LSTM** to identify terrain by making use of accelerometer and gyroscope measurements.

· Addressed dataset imbalance by assigning different weights to each class and used **StandardScaler** to scale input data.

· Achieved **89.3%** accuracy on test set and collaborated with a team member from the Department of Statistics at NCSU.

Digit Recognition System- MNIST Dataset – Python (PyTorch) :   **Jan 2023, NCSU**

· Developed and trained conditional **GAN** to generate hand-written images of digits, conditioned on the class vector.

· Generator and Discriminator networks were created, and both the network losses converged within **1/1000th** of a unit.

2D Object Detection for Autonomous Vehicles – Python (Keras, TensorFlow) :   **Dec 2022, NCSU**

· Made use of **YOLOv3** to make **Machine Learning** model utilizing Non-Max Suppression, Intersection Over Union and Bounding box techniques trained over **10,000+** images for **Object Detection** in Autonomous Vehicles.

· Bundled **Django**, **Tkinter** to create interactive and intuitive frontend for the system. Achieved the accuracy of 97%.

Diabetes Disease detection – Python (Tableau, Sklearn): Professional Reference - mahadev.patil@ritindia.edu   **Aug 2021, RIT**

· Determine the presence of diabetes based on locally collected dataset working with **SVM** classification algorithm.

· The locally collected dataset consisted of various patient features such as age, BMI, blood pressure, and glucose levels, which were used to train the classification model to obtain the **accuracy of 89%.**

ACTIVITIES & CERTIFICATIONS

· NVIDIA - "Deep Learning Fundamentals", "Image Segmentation Techniques", "Time Series Data Modeling with RNN"

· TensorFlow Developer Certificate – Built models in TensorFlow to apply on Image Recognition, Object Detection and NLP

· NC State – Embedded Machine Learning Club & Data Analytics – Member.

PUBLICATION

G. S. Wangikar, "**Diabetes Detection - An Application of Machine Learning in Healthcare Industry**", *International Research Journal of Modernization and Engineering Technology & Science, Volume 4, Issue 6.*