

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 **RNN** 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 addition of an **CNN** framework specifically tailored for predicting DEG's 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

- Google Cloud Training – Data Engineering, Big Data and Machine Learning on GCP Specialization Certificate
- TensorFlow Developer Certificate – Built models in TensorFlow to apply on Image Recognition, Object Detection and NLP
- NVIDIA - “Deep Learning Fundamentals”, “Image Segmentation Techniques”, “Time Series Data Modeling with RNN”

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.