Saiprakash Nalubolu

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Education

Binghamton University, State University of New York *Expected Graduation: Dec 2025*
Master of Science in Computer Science *CGPA: 3.84/4.00*

- *Coursework:* Machine Learning, Artificial Intelligence, Deep Learning, Design and analysis of Algorithms.

Vellore Institute of Technology, Vellore *July 2016 – June 2020*
Bachelor of Technology in Computer Science and Engineering

- *Coursework:* Image Processing, Data Visualization, Database Management, High Performance Computing.

Technologies

Languages: Python, Java, R, C, C++, Matlab, SQL, Bash

Development Tools: Jupyter, Git, SQL Developer, MS Access, Eclipse, JIRA, ALM, ARD, PCOMM.

Data Visualization: Tableau, Power BI, matplotlib, Seaborn.

ML & Data Science Libraries: PyTorch, TensorFlow, Keras, Scikit-Learn, NumPy, Pandas, OpenCV.

Experience

Research Assistant, Binghamton University Sept 2024 – Feb 2025

- Led a cell segmentation project by implementing the watershed algorithm and compared the results with Fiji(ImageJ2), refining image pre-processing techniques to improve boundary detection accuracy in biomedical images.
- Contributed to the development of a machine learning model aimed at predicting lung cancer patient survival times by extracting features from large-scale whole slide images(WSI) and experimenting with various DL architectures
- Conducted comprehensive literature reviews on current survival prediction models, integrating clinical insights to enhance algorithm design and identify key challenges in data preprocessing and model training.

Selenium Automation Test Engineer, Tata Consultancy Services – Chennai, TN Mar 2021 – Dec 2023

- Led testing efforts in an Agile environment, completing successful automation testing for 17 projects.
- Proficient in front-end and back-end testing using Selenium automation frameworks. Designed scripts using ARD and extracted data through MS DB Access and PCOMM.
- Enhanced test automation by developing regression scripts, which improved test coverage by 40% over 2 years, and streamlining data validation processes with Python. These efforts reduced manual testing by 30% ensuring data integrity and improved the quality of product releases, similar to data pre-processing techniques in machine learning.
- Collaborated with multiple cross-functional data teams and key stakeholders across departments to analyze test data patterns and validate model outputs, applying data-driven testing approaches to enhance the accuracy and robustness of large-scale automation frameworks.
- Received 3 On-the-spot awards, that are awarded for an employee for their exceptional performance.

Projects

Analysis of Sports trends on Reddit and 4chan August 2024 - Dec 2024

- Developed a data pipeline to collect and analyze user engagement and toxicity trends on Reddit and 4chan using Python, PostgreSQL, and NLP models. Implemented sentiment analysis with Hugging Face transformers and built an interactive dashboard with Flask and Plotly to visualize engagement-to-toxicity correlations, aiding in content moderation strategies.

Hand written digit recognition using CNN and Fine tuning pre-trained models Aug 2024 - Sept 2024

- Developed a custom CNN model for MNIST digit recognition, achieving 99% accuracy using various optimizers (Adam, SGD) and regularization techniques (L1, L2). Also applied fine-tuning on pre-trained models like VGG16(98.57%), ResNet50, and MobileNetV2. Extended recognition to video frames using OpenCV.

Pokemon Battle prediction | Kaggle June 2024 - July 2024

- Developed a Random Forest classifier to predict Pokemon battle outcomes with 95% accuracy. Engineered features based on differences in HP, Attack, Defense and special attributes of battling Pokemon.

Finger Vein Recognition using CNN January 2020 - June 2020

- Developed a deep learning model using Convolutional Neural Networks (CNN) to identify individuals based on unique finger vein patterns, achieving high accuracy in biometric authentication. Demonstrated that the model is more reliable and precise than traditional fingerprint scanners.