

Manikhanta Praphul Samavedam

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Available: July - Dec 2023

EDUCATION

Northeastern University, Khoury College of Computer Sciences, Boston, Massachusetts Aug 2022 - May 2024
Master of Science in Artificial Intelligence GPA: 4.0/4.0

Related courses: Machine Learning, Pattern Recognition & Computer Vision, Foundations of Artificial Intelligence

Birla Institute of Technology and Science Pilani, Pilani, India May 2018

Bachelor of Engineering Honors in Electrical & Electronics Engineering GPA: 8.42/10.0

Related courses: Probability & Statistics, Vector Algebra, Digital Image Processing, Symbolic Logic

TECHNICAL SKILLS

Languages/ Databases: Python, SQL, Java, C++, Oracle, MySQL
Skills: Machine Learning, Computer Vision, NLP, Microsoft Azure, Tableau, Alteryx
Libraries: TensorFlow, Keras, PyTorch, OpenCV, Scikit-learn, Seaborn, Matplotlib, Pandas, NumPy
Certifications: Azure AI & Data Fundamentals, Advanced Alteryx, Deep Learning Specialization (Coursera)
ML Models/ Architectures: Linear, Logistic, SVMs, XGBoost, Gradient Boost, Decision Tree, Random Forest, LeNet-5, AlexNet, VGG-16, ResNet-50, Inception Net, LSTM, BERT, GRU, Bi-LSTM, RNN

WORK EXPERIENCE

Graduate Engineer Trainee (Data Scientist) | **UBS**, Pune, India Jul 2018 - Mar 2022

- Attained **1st** position in 'Artificial Intelligence' category across APAC at UBS Super Stars.
- Amplified research article engagement time by **12%** by deploying hybrid recommendation system within 6 months.
- Predicted salesperson ratings with 0.003 RMSE based on client relationship management (CRM) data in 4 months.
- Accomplished **36%** increase in throughput by migrating 4 key performance indicators (KPIs) to Python in 4 months.
- Diminished manual efforts by 65% for every release through design and implementation of data-ingestion engine.

PROJECTS

Table Tennis ball tracking [\[details\]](#) Apr 2023 – Apr 2023

- Developed U-net like model to detect the surface of table, transfer trained **YoLo** to detect the table tennis ball & designed a convolutional neural network to detect the events of bounce, hitting net.
- Created shot chart through tracking of table tennis ball using calibrated camera by detected known table with 93% accuracy.

Natural Language Inference [\[details\]](#) Apr 2023 – Apr 2023

- Trained LSTMs, GRUs and Bi-LSTMs with Bag of Words, TF-IDF, word2Vec & Glove embeddings as features on SNLI, MNLI data after cleansing, stemming & lemmatization using NLTK. Fine-tuned Bi-LSTMs to have 88% accuracy.
- Improved accuracy rate to 91% by transfer learning the BERT model from Hugging face.

Image Popularity Anticipation – [5th Position](#) Mar 2023 – Mar 2023

- Successfully trained a linear regression model to forecast image download counts, leveraging capture details, associated keywords, and color distribution, while eliminating the need for CNN-based image processing. [\[My Solution Discussion\]](#)
- Enriched R2 score by 5% through data pre-processing and feature engineering on description, ISO, exposure time, etc.
- Simplified the model & reduced training time through principal component analysis reducing to 5 principal components.

Store Sales-Prediction: Hackathon [\[14th/6828\]](#) Sep 2021 - Sep 2021

- Built prediction system based on sales data of WOMart for 18 months from 365 retail stores across 100+ cities.
- Feature engineered the data to have lagging, leading orders in area, geospatial information of store from warehouse.
- Secured **14th** position in challenge out of 6828 participants by employing XG Boost Regressor.

Real-time 7-Emotions detection Oct 2022 - Nov 2022

- Designed 2 CNNs in TensorFlow with varied parameters on FER-2013 to detect 7 emotions achieving 61.4% & 56% accuracies.
- Transfer learned 2 models from ResNet and VGG by retraining last 4 layers to improve accuracy to nearly **85% & 83%**.
- Achieved **91%** accuracy using max voting detected by 4 DL models on real time video using OpenCV.

Real time -2D object recognition – [\[Report\]](#) Jan 2023 - Feb 2023

- Segmented the cleaned binary image post thresholding images to create database of Hu Moments, H/W ratio, & %fill as features of known objects. Developed model to detect 17 objects based on distance from known features in live video.
- Enhanced accuracy by 12% through KNN algorithm & marking new object as 'Unknown' if away by 3 standard deviations.
- Enabled system to extend for new objects taking label for the unknown object and storing its features into the database.