

TABINDA HAYAT

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EDUCATION

University at Buffalo, The State University of New York| Institute for AI & Data Science
Master of Professional Studies in Data Sciences & Applications
Chhattisgarh Swami Vivekanand Technical University| Computer Science & Engineering
Bachelor of Engineering in Computer Science & Engineering

Conferred: January 2024
Chhattisgarh, India
Conferred: August 2018

SKILLS & TOOLS

Machine Learning · Data Mining · Data Analysis · Predictive Modeling · Deep Learning · Python · R · SQL · Spark · Kafka · Computer Vision · NLP · Statistical Analysis · Data Analytics · Tableau · PyTorch · TensorFlow · Data Modeling · Statistical Modeling Tools · Big Data · Time Series Analysis · Feature Engineering · Neural Network Model · Decision Trees · Scikit-learn · MLOps · Analytical Tools · Data structures and algorithms · Docker · BERT · Transformer Model (LLM) · Generative AI · Sentiment Analysis · GCP · ETL · Data Integration · RestAPI · LangChain · Azure Databricks · Azure ML Studio · Azure Kubernetes Services · Azure DevOps · RAG

PROFESSIONAL EXPERIENCE

Tata Consultancy Services
Machine Learning Engineer (Data Analytics)

Bengaluru, India
March 2019 – July 2022

Honored with “**On the spot (Team)**” award for surpassing the assigned targets by **40%**.

- Used AnyLogic and **Microsoft Project Bonsai** to train a **reinforcement learning model**, cutting average product costs by **46%**.
- Streamed **80,000** tags/hour from Edge devices to **Azure IoT Hub** and deployed **ML models** using **Azure DevOps CI/CD** pipelines on **Azure Kubernetes**.
- Programmed **OpenCV** and **CNNs** for surface crack **detection**, achieving **92%** accuracy with FRCNN compared to VGG-16, ResNet50, and YOLOv3.
- Developed **CNN** models trained on **CIFAR-10** for people counting and **face detection**, achieving **85%** accuracy.
- Transitioned **model** reports from **Oracle** to Azure **Databricks** with **PySpark** and created advanced reports for improved **performance** and **analytics**.
- Used **Transformers** and **BERT** for **tokenization** and **GPT-4** for training to create a bot that accurately extracts and parses receipt information, enhancing **data processing** efficiency.

Google Developer Student Club
Technology Lead

Buffalo, New York
January 2023 – July 2022

- Led technical sessions on **GCP** for **85+** attendees.
- Managed the club's social media on LinkedIn, Instagram, FB, Slack, and Discord, increasing followers by **60%**.
- Promoted the club at university events, successfully onboarding **200+** new students.

INTERNSHIP

Summer Associate, NASA L'SPACE - Proposal Writing & Evaluation, Buffalo, New York

May 2023 - August 2023

- **Drafted** and reviewed innovative **proposals** for new technologies and concepts to enable agency objectives and enhance **mission capabilities** at NASA as a goal to win the **award** of **\$10000** in funding.

KEY PROJECTS

Diabetes Prediction Model: ML, Python and REST API

- Developed a **machine learning** model for diabetes prediction using health metrics data. Implemented **data preprocessing**, **feature scaling**, and model training with **Random Forest** and **Logistic Regression**. Deployed a **Flask-based REST API** to provide real-time **predictions** and probabilities.

Disaster Tweet Classifier: Python and NLP

- Developed and implemented a tweet **classification model** for disaster detection using TF-IDF **vectorization** and **logistic regression**, achieving a validation accuracy of **79%**. **Preprocessed** text data, trained the model, and evaluated its performance, demonstrating strong skills in machine learning and **natural language processing**.

Customer Churn Prediction with Deep Learning using Keras: R

Developed a **deep learning model** using **Keras** to predict **customer churn** based on historical data. Utilized **R** programming language to preprocess data, train the model, and evaluate its performance. Employed techniques such as data preprocessing, model training, and **evaluation** to achieve a model accuracy of **81.8%**. Successfully implemented the project, demonstrating proficiency in deep learning, R programming, and **predictive analytics**.

Realtime fruit detection using YOLOv4: Python and Computer Vision

- Developed a real-time fruit detection system using **YOLOv4**. Implemented **image processing** techniques and deep learning **algorithms** to detect various fruits in live video streams. Utilized **OpenCV** and **TensorFlow** frameworks to preprocess images, run **inference**, and draw bounding boxes around detected fruits.

Weather Data Analysis: ETL and ML

- Developed an end-to-end solution for weather **data analysis** using an **ETL** pipeline, **machine learning**, and **REST API** integration. Extracted weather data from an external API, transformed and loaded it into a **SQLite** database. Trained a **Random Forest Regressor** to predict temperature, **fine-tuned** the model, and deployed it via a **Flask-based REST API** for **real-time predictions**.

RESEARCH

Developing humanoid as an information kiosk: Human-Robot Interaction Lab, UB

February 2023 - May 2023

- Researched and implemented NLP and SLAM-based applications on the humanoid robot "Pepper" using Python for conversational abilities, impression generation, and emotion detection.

CERTIFICATIONS

RAG and Fine - tuning: LLM · Generative AI: Working with Large Language · LeetCode Badge for Pandas · AZ - 900 (Azure AI Fundamentals) · AZ - 100 (Azure Fundamentals) · Data Visualization in Tableau · Prompt Engineering with LinkedIn · Applied Data Science Module Certificate of Completion | WorldQuant University · Fundamentals of SQL on Databricks | Databricks Academy · ETL : Data Extraction | Databricks Academy · What is Data Science? IBM - Coursera · Programming for Everybody (Getting Started with Python) | University of Michigan - Coursera · Introduction to Python Course | Data Camp · **Author** | Thrive Global, a venture by Ariana Huffington · Volunteering towards ensuring child rights | CRY