

Harikesh Kushwaha

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DATA SCIENTIST

As a recent graduate with a strong foundation in **statistics** and machine learning algorithms, I have worked on several personal projects including **sentiment analysis**, **natural language processing**, and **computer vision**. In my recent projects, I have showcased my skills in **data cleaning**, **feature engineering**, and **model selection**. I have also demonstrated my proficiency in tools like **Python**, **TensorFlow**, **Keras**, **scikit-learn**, and **pandas**. With a passion for solving complex problems and a drive to constantly learn and improve, I am excited to take on new challenges in the field of Data Science.

TECHNICAL SKILLS

Languages	: Python, SQL, JavaScript, MATLAB, C++
Frameworks	: TensorFlow, Keras, Scikit-learn, Django, Streamlit
Libraries	: matplotlib, pandas, NumPy, NLTK, Seaborn, BeautifulSoup, Selenium
Databases	: MySQL, MongoDB
Dev Tools	: VS Code, Git, GitHub, Jupyter Notebook, Anaconda, AWS, Kaggle

EXPERIENCE

Junior Data Scientist <i>Nuvoretail Enlytical Technologies Private Limited</i>	June 2023 – Present <i>New Delhi</i>
<ul style="list-style-type: none">Automated Amazon Bidding with Python: Developed Python scripts to automate Amazon Marketing Services bidding, resulting in a 50% reduction in manual intervention and a 20% increase in performance.Improved Bidding Accuracy with Machine Learning: Developed a machine learning model to predict the optimal bid for a product, resulting in a 10% increase in performance.Optimized Task Scheduling with Airflow: Implemented Airflow for task scheduling, ensuring seamless execution of automated processes.Developed Flask Server for the Team: Developed a Flask server so that the team can interact and modify the system generated data.	

PROJECTS

House Prices Prediction	<i>Python, pandas, scikit-learn, kaggle, Matplotlib, Seaborn</i>	Source Code
<ul style="list-style-type: none">Analyzed over 80 features to predict house prices using machine learning.Performed data visualization and feature engineering using Matplotlib and Seaborn, respectively.Trained multiple models using scikit-learn and selected the best one by applying grid search and cross-validation. Achieved a top 12% ranking on the Kaggle leaderboard.		
Digit Recognizer	<i>Python, TensorFlow, Keras, Kaggle</i>	Source Code
<ul style="list-style-type: none">Developed a very deep convolutional neural network using TensorFlow and Keras with dropout and batch normalization to improve performance.Achieved an accuracy of 99.48% on the test set, securing a place in the top 15% on the Kaggle leaderboard.		
Food Vision	<i>Python, TensorFlow, Colab</i>	Source Code
<ul style="list-style-type: none">Developed a deep neural network using TensorFlow and Keras to classify 101 categories of food.Used a pretrained EfficientNet model to extract features from the food images, and then fine-tuned the model to improve its accuracy.Achieved an accuracy of 80% on the test set, demonstrating the effectiveness of the approach in addressing complex image recognition problems.		
NLP With Disaster Tweets	<i>Python, TensorFlow, NLP, Text Vectorization, LSTM, GRU, CNN</i>	Source Code

- Developed NLP models to classify disaster and non-disaster tweets using **text vectorization**, various **word embeddings**, and deep learning models including **LSTM**, **GRU**, their **bidirectional** variants, and **1D CNNs**
- Utilized the **Universal Sentence Encoder** to create embeddings on both the character and word levels, and implemented a **multivariate** model using the **functional API** of **TensorFlow**.

TensorFlow Speech Recognition Challenge

Python, pandas, TensorFlow, kaggle

[Source Code](#)

- Trained a deep neural network to recognize **30** different commands by creating waveforms and transforming them into **2D spectrograms** using STFT.
- Used a convolutional neural network architecture and achieved an **accuracy of about 90%** on the test set.

Titanic - Machine Learning from Disaster

Python, pandas, sklearn, kaggle

[Source Code](#)

- Analyzed the Titanic dataset and performed **data cleaning**, **feature engineering**, and **data visualization**.
- Built several machine learning models including **Logistic Regression**, **Random Forest**, and **Gradient Boosting** and selected the best model using **cross-validation**.
- Achieved a test accuracy of **78.5%**, which was in the **top 12%** of the Kaggle leaderboard at the time.

NNet

Python, NumPy, Neural Network

[Source Code](#)

- Developed a module for arbitrary neural network architecture using **Python** and **NumPy**, implementing layers such as **Dense**, **Dropout**, **Conv2D**, **Flatten**, **Reshape** etc.
- Implemented both the forward and backward pass of the layers, demonstrating proficiency in **backpropagation** and **gradient descent**.
- Created an API similar to **Keras** for seamless integration and implemented various activation functions including **ReLU**, **tanh**, **sigmoid**, and **softmax**.
- Demonstrated strong skills in **machine learning**, **Python programming**, and **mathematics** while gaining a deeper understanding of the inner workings of neural networks.

ReVision

Python, NumPy, TensorFlow, PyTorch, CLI

[Source Code](#)

- Created a personal project called **ReVision** to learn the concepts and implementation details of groundbreaking **computer vision papers**.
- Utilized popular deep learning frameworks such as **TensorFlow** and **PyTorch** to implement the architectures of seminal papers like **LeNet**, **AlexNet**, **VGG**, **ResNet**, **Inception**, **EfficientNet**, etc.
- Developed a deep understanding of the underlying principles of deep learning and computer vision, while improving skills in **Python programming**, **machine learning**, and **deep learning**.
- Demonstrated proficiency in various computer vision tasks, such as **image classification**, **object detection**, and **semantic segmentation**.

EDUCATION

Indian Institute of Technology Delhi

Master of Science in Physics, (8.6 GPA)

New Delhi, India

July 2021 – May 2023 (Expected)

Banaras Hindu University

Bachelor of Science in Physics, (8.4 GPA)

Varanasi, Uttar Pradesh India

July 2018 – May 2021

CERTIFICATIONS

- Machine Learning Specialization (DeepLearning.AI) [Certificate](#)
- Simulation Models for Decision Making (University of Minnesota) [Certificate](#)
- IBM Data Analyst Capstone Project (IBM) [Certificate](#)
- Financial Markets (Yale University) [Certificate](#)
- Deep Learning Specialization (DeepLearning.AI) [Certificate](#)
- TensorFlow Developer Certificate in 2022: Zero to Mastery (Udemy) [Certificate](#)
- TensorFlow: Advanced Techniques Specialization [Certificate](#)