

Harikesh Kushwaha

[LinkedIn](#) | [Portfolio](#) | [GitHub](#) | [Kaggle](#)

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TECHNICAL SKILLS

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

EXPERIENCE

Junior Data Scientist June 2023 – Present
Nuvoretail Enlytical Technology Private Limited *New Delhi*

- **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 Log Tracking and Issue Identification with Airflow Scheduling:** Leveraged Airflow DAGs for streamlined **log management** and **rapid task issue identification**, enhancing process reliability.
- **Improved Bidding Accuracy with Machine Learning:** Developed **machine learning** models and **statistical algorithms** to predict the optimal bid for a product resulting in cost-effective advertisement.
- **Custom Flask Server Development:** Designed and implemented a Flask server to facilitate **team interaction** and empower seamless data modification within the system.

PROJECTS

House Prices Prediction *Python, pandas, scikit-learn, kaggle, Matplotlib, Seaborn* [Source Code](#)

- 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 *Python, TensorFlow, Keras, Kaggle* [Source Code](#)

- 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.
- Deployed the app on **HuggingFace** using **Gradio** and made it available to the public. Find the app [here](#).

Food Vision *Python, TensorFlow, Colab* [Source Code](#)

- 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 *Python, TensorFlow, NLP, Text Vectorization, LSTM, GRU, CNN* [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

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](#)