

Bhaven Naik

Machine Learning Engineer

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🐙 Github

Profile

As a skilled Machine Learning Engineer with experience in Python, PyTorch, Tensorflow, Keras, Pandas, Numpy, Scikit-Learn, and Matplotlib, I am well-versed in the development and deployment of machine learning models. Additionally, my proficiency in Flask, ReactJS, NodeJS, and HTML5 enables me to build robust client interfaces. With a Master of Applied Computer Science from St. Francis Xavier University, I am eager to leverage my skills and knowledge to contribute to innovative projects in the field of machine learning.

Skills

Technology

Python, PyTorch, Tensorflow, Keras, Pandas, Numpy, Scikit-Learn, Matplotlib, Docker, FastAPI, Hadoop, Flask, ReactJS, NodeJS, ExpressJS, HTML5, Bootstrap5, CSS3, Docker, PostgreSQL, MySQL, MongoDB.

Tools

VS Code, Docker, Jira, GitHub, Linux, macOS, Windows, Power BI, AWS (EC2 and S3), MS Office, JetBrains (PyCharm, WebStorm), Slack, Zoom, Microsoft Teams, Discord, Anaconda, Jupyter.

Memberships & Certifications

- Digital Nova Scotia Member
- LinkedIn Badges: Python, Machine Learning, Hadoop
- IBM Machine Learning Essentials

Professional Experience

Research Assistant Intern, St. Francis Xavier University ✉

09/2021 – 04/2022

Antigonish, Canada

- Implemented and developed a research project focused on exploring the applications of Generative Adversarial Networks (GANs) in Augmentation and Medical Imaging.
- Created a PyTorch Lightning Deep Convolutional GAN (DCGAN) to fine-tune and train on the HMDB51 dataset for generating augmented videos.
- Designed and implemented a scalable training pipeline using PyTorch Lightning, optimizing network architecture and hyperparameters for efficient model training.
- Utilized PyTorchVideo's pre-trained classifier to measure and compare the performance of augmented clips with respect to their original counterparts.
- Conducted a comprehensive evaluation of generated augmentations, assessing fidelity and quality using advanced evaluation techniques.
- Developed proficiency in GAN implementation, PyTorch Lightning, and PyTorchVideo for efficient training and performance evaluation.
- Deepened understanding of Augmentation and Medical Imaging domains, acquiring valuable insights into the applications of GANs.
- Demonstrated strong research and technical skills, contributing to the advancement of artificial intelligence and computer vision fields.

Internship Trainee, *EduVance*

06/2018 – 07/2018
Mumbai, India

- Implemented and developed a machine learning project focusing on the utilization of Python fundamentals, including core concepts such as Python basics, File I/O operations, exception handling, lambda and map functions, and list comprehension. The project involved hands-on learning in Jupyter Notebooks, enabling practical application and reinforcement of these foundational skills.
- Designed and created a comprehensive framework to explore and implement traditional machine learning algorithms. Leveraged Decision Trees, Linear Regression, Multivariate Regression, Polynomial Regression, Stochastic Gradient Descent, and Perceptron algorithms to address various real-world problem domains. Through the meticulous design of the algorithmic pipeline, acquired a deep understanding of their underlying principles and their practical applications in predictive modeling and data analysis.
- Developed proficiency in Python programming, effectively utilizing its versatile features, including File I/O operations, exception handling, and higher-order functions such as lambda and map functions. Employed list comprehension techniques to enhance code readability and efficiency.
- Engaged in practical learning by actively working within Jupyter Notebooks, utilizing its interactive environment to explore datasets, implement algorithms, and analyze the outcomes. This hands-on approach facilitated a deeper understanding of the nuances and intricacies of machine learning techniques.

Projects

ML Model Deployment Demonstration, *Python, FastAPI, Docker, PyTorch*

01/2023 – 01/2023

- Implemented inference requests to machine learning models using the Hugging Face Inference API, enabling seamless and accurate predictions.
- Developed a Model API using FastAPI, a high-performance Python web framework, to create a robust interface for efficient communication between clients and machine learning models.
- Designed and created a Docker Container Image to streamline the deployment process, ensuring portability and reproducibility of the project.
- Demonstrated proficiency in utilizing the Hugging Face Inference API for efficient inference and prediction tasks.
- Showcased expertise in web development by leveraging FastAPI to develop a performant and scalable Model API.
- Utilized Docker containerization to simplify and streamline the deployment of the project across different environments.
- Highlighted strong skills in machine learning deployment, web development, and containerization.
- Contributed to the development of efficient and scalable solutions for machine learning inference and deployment.

GAN Augmentation, *Python, PyTorch, PyTorch Lightning, PyTorchVideo*

09/2021 – 04/2022

- Implemented and developed a research project focused on exploring the applications of Generative Adversarial Networks (GANs) in Augmentation and Medical Imaging.
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Exploratory Data Analysis,

01/2023 – 01/2023

Python, Jupyter, Pandas, Scikit-learn, Matplotlib, Seaborn [↗](#)

- Implemented and conducted Exploratory Data Analysis (EDA) on the Iris Flower dataset, employing Python libraries such as pandas, scikit-learn, seaborn, and matplotlib. This comprehensive analysis aimed to gain insights into the dataset's characteristics, relationships, and distributions.
- Designed and developed the EDA process in a Jupyter Notebook, utilizing its interactive environment to enhance visualization and facilitate a comprehensive understanding of the dataset. This approach allowed for a seamless and visually appealing exploration of the data.
- Created visually informative charts, plots, and statistical summaries using seaborn and matplotlib, enabling effective data visualization and interpretation. Leveraged these visualizations to uncover patterns, correlations, and trends within the Iris Flower dataset.
- Utilized pandas for data manipulation and preprocessing, ensuring the dataset was properly formatted and prepared for analysis. Employed scikit-learn to explore various statistical techniques and machine learning models to further analyze and understand the dataset.
- Demonstrated proficiency in Python libraries for data analysis, employing pandas, scikit-learn, seaborn, and matplotlib for efficient and insightful EDA of the Iris Flower dataset.
- Showcased strong data visualization skills by designing and developing an interactive EDA process in Jupyter Notebook, resulting in enhanced comprehension of the dataset.
- Contributed to the field of data analysis by applying EDA techniques to extract meaningful insights from the Iris Flower dataset, providing valuable knowledge for further research and applications.

Diabetic Retinopathy Identification,


03/2019 – 05/2020

Python, Tensorflow, Keras, Flask, HTML, CSS, AWS EC2 [↗](#)

- Implemented and fine-tuned a pre-trained VGG16 model using TensorFlow Keras for the classification of Diabetic Retinopathy severities.
- Developed an intuitive client interface utilizing Flask for the backend and HTML for the front end, ensuring ease of use and accessibility.
- Designed the client interface using CSS to enhance aesthetics and create a visually appealing user experience.
- Deployed the project on an AWS EC2 instance, ensuring scalability and reliable performance.
- Demonstrated proficiency in TensorFlow Keras, model customization, and medical image classification.
- Showcased expertise in web development, utilizing Flask, HTML, and CSS to create a user-friendly interface.
- Leveraged AWS EC2 for project deployment, ensuring accessibility and scalability.

- Contributed to improving healthcare outcomes through innovative technology applications.

Education

Master of Applied Computer Science (graduated) , <i>St. Francis Xavier University</i> 	2020 – 2022
Machine Learning Design, Data Mining & Machine Learning, Big Data, Advanced Data Analytics	Antigonish, Canada
Bachelor of Computer Engineering (graduated) , <i>University of Mumbai</i>	2016 – 2020
Artificial Intelligence, Machine Learning, Data Warehousing & Mining	Mumbai, India