

ATHARVA HIWAREKAR

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Education

Rutgers University New Brunswick

August 2022 – May 2024

Master of Science in Computer Science

New Brunswick, NJ

- Courses : Data Structures, Introduction to AI, Math foundations of Data Science

Pune Institute of Computer Technology (GPA 9.06/10)

August 2017 – May 2021

Bachelor of Engineering in Computer Engineering

Pune, India

- Courses : Data Structures, OOP, DBMS, Operating Systems, Software Engineering, Computer Networks, Machine Learning

Skills

Languages: Python, C++, SQL, Java, Javascript

Frameworks: Pandas, Apache Kafka, Flask, NodeJS, Matplotlib, PySpark, Keras, OpenCV

Tools: AWS, MySQL, MongoDB, Git, Docker, Jenkins

Web dev: HTML, CSS, HTTP, REST API

Experience

Tata Consultancy Services

July 2021 – August 2022

Systems Engineer

Pune, India

- Created Python services for preprocessing and streaming realtime data to AWS Datalake with Apache Kafka as a middleware;obtained a throughput of 0.33 Mbps
- Restructured legacy Python code using Object oriented concepts achieving 25% reduced memory usage
- Deployed Python scripts for batch processing historical raw data on AWS S3 buckets

Bizamica Softwares

September 2020 – January 2021

Machine Learning Intern

Pune, India

- Created a feature to classify handwritten/typed text from scanned images of documents with 97% validation accuracy for an OCR based Cognitive Document Processing product
- Streamlined Python script for feature scaling and building data preprocessing pipelines using Numpy and Pandas; increased classification accuracy by 50%

Prescient Automation

June 2020 – September 2020

Deep Learning and Computer Vision Intern

Remote

- Built a feature to detect hair length for a Facial Recognition based Recommendation System with 85% validation accuracy using Python, OpenCV, Keras and dlib
- Evaluated performance for various Neural Network Architectures such as CNN, U-Net FCN, ResNet, Mobile-Net

Projects

Twitter Sentiment Analysis [Code]

- Leveraged BERT and Word Embeddings to recognize Sentiment of a tweet with 100% accuracy
- Analysed twitter data to predict user behaviour based on tweet history
- Datasets : Twitter Sentiment Analysis dataset contains 1,600,000 tweets extracted using the Twitter API

Traffic Surveillance and Management System [Code]

- Implemented a Flask web application to capture and detect vehicle traffic from video data leveraging Object Detection and Image Processing with detection rate of 0.91
- The system uses YOLOv3 and OpenCV to calculate vehicle speed with RMSE of 4.57 km/hr
- Datasets : AAU Rainsnow dataset, Vehicle speed measurement on Urban highways dataset

Face Emotion Recognition [Code]

- Designed a Web application with Deep Learning and Image processing to recognize facial emotions of user in real-time with webcam input
- Developed a VGG-16 model that uses Keras with OpenCV and has 92% test accuracy
- Datasets : FER2013 Dataset consists of 35,887 grayscale, 48x48 sized face images with seven emotions

Research

Vehicle speed estimation using Object Detection for Intelligent Traffic Management

- Led a team of four as First author to present paper in IEEE World Conference on Applied Intelligence and Computing (AIC-2022)
- Ready to be published in SCRS Book series - Artificial Intelligence and Communication Technologies