

Himani Haresh Patel

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EDUCATION

Rutgers University, New Brunswick, New Jersey

Master of Science in Computer Science – Specialization in Artificial Intelligence

Relevant Courses: Data Structures & Algorithms, Intro to AI, Statistics, Massive Data Mining, Database for Data Science, Machine Learning

Sep 2021 - May 2023

GPA: 4/4

Institute of Technology, Nirma University, Gujarat, India

Bachelor of Technology, Computer Science

Aug 2016 - Jul 2020

GPA: 8.47/10

RELEVANT EXPERIENCE

IT Research Support Specialist, Rutgers University

Oct 2021 - Present

- Responsible for collecting data using Python from Reddit, Twitter, Volunteer Science, Qualtrics. Also responsible for cleaning, preparing, and preparing visualizations of the data for research use.
- Responsible for implementing workflows in KNIME, Python, Java and JavaScript, TypeScript, HTML/CSS for custom requests for example Sentiment Analysis allowing more than 20 faculties and 1700 students with non-computer background to efficiently execute and modify the algorithms for their research and draw inferences.

AI Consultant, VMukti Solutions, India

Apr 2021 - May 2021

- Designed and implemented a workflow for real-time retrieving, analyzing, and handling issues in more than 47,000 cameras across multiple servers and reporting the actions and inferences to relevant teams.
- Utilized python with multiprocessing for the implementation. This directly impacted around 30 employees of 2 departments.
- Developed plugins for data transfer between surveillance camera, frontend, and Electronic Voting Machine detection engine.

AI Intern, VMukti Solutions, India

Sep 2020 - Mar 2021

- Reduced the inference time of developed models by 150% using TensorRT to optimize the model architecture.
- Developed pre and post-processing modules for face detection and recognition systems, Social Distancing, and Mask Detection system for Legislative Assembly Election centers.

Software Intern, Studio Untitled1, India

Jan 2020 - May 2020

- Developed User Menu and navigation, Camera Calibration, ArUco Marker Detection, Dynamic Thresholding, and Accelerometer Calibration modules for 3D Body Mapping(for Apparel Industry) Android application for 3D Body Mapping for Apparel Industry.

PROJECTS

Voyage into the Unknown | Python, Multiprocessing, Pandas, Matplotlib, Tensorflow, Keras

- A semester-long project where I designed and implemented algorithms, using A* as a base and Machine Learning, for variants of target finding agent in the given gridworld with obstacles, where the agent has no prior knowledge of the environment and learns about it as it traverses along the gridworld.
- Variables are as follows: 1) Target location 2) Stationary or moving target 3) Field of view of the agent 4) Inferring capability of the agent 5) Movement constraints 6) Cell type: block or unblocked 7) Terrain type of unblocked cells.

Traveling Salesman Problem Variations | Python, Multiprocessing, PySimpleGUI, Matplotlib

- Implemented three genetic algorithms: Ant Colony Optimization, Black Hole Optimization, Particle Swarm Optimization; to find a polynomial-time solution of an NP-Hard problem and analyzed the space and time complexity along with optimality of the solutions.
- Developed UI for taking inputs and visualizing the output of resulting suboptimal shortest tour traversing all cities once.

Mask-NoMask Tracker Using YOLOv4-DeepSort | Python, Tensorflow, NumPY, Pandas, Matplotlib

- Tracking people and detecting whether they are wearing a face mask or not on an entry gate from surveillance camera input.
- Also implemented people counter using the same inferences which decrease the Analytics load on the server drastically.

Summarizing Professional Telephonic Conversations | Python, Keras, Tensorflow, NumPY

- Used DeepSpeech model from Baidu to convert audio to text and Text summarization using transfer learning.

Western Railway- Ahmedabad Division, India | Google Apps Script, HTML, CSS, SQL

- The project was based on Google Apps Script and Data Management to develop a dashboard and automate the Google Sheets for employees and learned to handle large datasets, make use of optimizations in the code to use the data effectively.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, TypeScript, C/C++, HTML/CSS, SQL, R

Libraries: OpenCV, Pytorch/TensorFlow, NumPY, Pandas, Matplotlib

Databases: MySQL, MongoDB

Tools: Docker, GStreamer, Nvidia-TensorRT, Git, GitHub, Visual Studio, Jupyter Notebook, CUDA, Angular, Android

POSITIONS OF RESPONSIBILITY

Creative Head, IEEE Student Branch

Nov 2018 - Nov 2019

- Responsibilities: Event Designing, Designing of posters, flyers, certificates, and IDs.

Teaching Volunteer, Bhojiyapura Elementary School

Summer 2019

- Taught Math and Environmental Studies to 2nd through 5th-grade students.