Himani Haresh Patel

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EDUCATION

Rutgers University, New Brunswick, New Jersey   **Sep 2021 - May 2023**
Master of Science in Computer Science – Specialization in Artificial Intelligence   *GPA: 4/4*
Relevant Courses: Data Structures & Algorithms, Intro to AI, Statistics, Massive Data Mining, Database for Data Science, Machine Learning
Institute of Technology, Nirma University, Gujarat, India   ***Aug 2016 - Jul 2020***
Bachelor of Technology, Computer Science   *GPA: 8.47/10*

RELEVANT EXPERIENCE

IT Research Support Specialist, *Rutgers University*   ***Oct 2021 - Present***
- Designing and implementing workflows using **KNIME, Python, Java and JavaScript, TypeScript, HTML/CSS** for **NLP** algorithms, helping more than **20 faculties and 1700 students** with a non-coding background to efficiently utilize the tools for their research.
- Collected data using **Python** from Reddit, Twitter, Volunteer Science, Qualtrics, Meltwater; cleaned the data and prepared visualizations for research use.

AI Consultant, *VMukti Solutions, India*   ***Apr 2021 - May 2021***
- Designed and implemented a workflow using **Python with multiprocessing** for real-time retrieving, analyzing, and handling issues in **47,000 cameras** across multiple servers automating the existing manual process for **45 employees** across multiple departments.
- Trained Electronic Voting Machine (EVM) detector, gaining an **accuracy of 91%** using **PyTorch.**
- Utilized **Python** to develop plugins for data transfer between surveillance camera, frontend, and EVM detection engine.

AI Intern, *VMukti Solutions, India*   ***Sep 2020 - Mar 2021***
- Improved the latency of Inference Engines by **200%** using **TensorRT** for optimizing existing model architectures.
- Developed pre and post-processing modules, using **Python with OpenCV**, for face recognition systems, Social Distancing and Mask Detection system for Legislative Assembly Election centers.

Software Intern, *Studio Untitled1, India*   ***Jan 2020 - May 2020***
- Utilized C++ with OpenCV using Java Native Interface for processing images used in body mapping algorithm resulting in **10% improved FPS.**
- Developed Camera Calibration, ArUco Marker Detection, Dynamic Thresholding, and Accelerometer Calibration modules for 3D Body Mapping **Android** application having significant impact on the Apparel Industry using **Android Natrive with Multithreading**.

PROJECTS

Voyage into the Unknown | *Python, Multiprocessing, Pandas, Matplotlib, Tensorflow, Keras* | GitHub
- Designed and implemented variations of A* algorithms using **Python with multiprocessing**, for different 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.
- Utilized the data generated from the implemented algorithmic agents to train a model using **Tensorflow and Keras** to mimic the behavior of algorithmic agents gaining over **91% accuracy**.

Traveling Salesman Problem Variations | *Python, Multiprocessing, PySimplGUI, Matplotlib* | GitHub
- Implemented three genetic algorithms: Ant Colony Optimization, Black Hole Optimization, Particle Swarm Optimization using **Python with multiprocessing**; 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 using **PySimpleGUI** for initial user inputs and utilized **Matplotlib** for visualization of results.

Mask-NoMask Tracker | *Python, Tensorflow, NumPY, Pandas, Matplotlib*
- Used OpenCV for preprocessing image data and used Tensorflow with **YOLOv4-DeepSort model** to detect a person wearing a mask and track them; resulting in **accuracy of 75%**.
- Utilized the same trained model to the existing people counter application which **reduced the analytics load on server by 30%.**

Western Railway- Ahmedabad Division, India | *Google Apps Script, HTML, CSS, SQL*
- Collaborated with a 7 member team to develop a dashboard and to customize and automate Google Sheets for **50 employees**.
- 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, Keras, 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   ***Apr 2019 - May 2019***
- Taught Math and Environmental Studies to 2nd through 5th-grade students.