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**
- Mining, cleaning, preprocessing data and visualizations for research, from Reddit, Twitter, Volunteer Science, Qualtrics, Meltwater.
- 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.

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 more than 47,000 cameras across multiple servers and reporting the actions and inferences to relevant teams.
- This automated the previously done manual work for around 35 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, PySimplGUI, 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*
- Project based on Google Apps Script and Data Management to develop a dashboard and automate the Google Sheets for 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.