Siddhi Brahmbhatt

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Education

2021–Present **Masters in Computer Science (Expected Graduation: May 2023)**.
- University of Massachusetts Amherst (3.93/4.0 GPA up to 3rd semester)
- Relevant coursework: Machine Learning, Neural Networks, Game Programming, Intelligent Visual Computing, Simulation, Computer Vision, Reinforcement Learning, Business Intelligence and Analytics, Advanced Natural Language Processing

2017–2021 **Bachelor of Engineering in Information Technology**.
- G H Patel College of Enginnering and Technology, Anand, Gujarat, India (9.73/10.00 CGPA)
- Final Year Project awarded financial assistance under Govt. of Gujarat's Student Startup and Innovation Policy

Experience

Spring 2022 – Fall 2022 **Computer Vision Researcher, UMass Center for Data Science**.
- Worked on building segmentation and damage assessment on satellite imagery to help the Red Cross in their disaster relief works.
- Collaborated with Microsoft's AI for the Good Research Lab and UC Berkeley's BAIR Lab to develop an end-to-end platform for post-disaster building segmentation and damage assessment on real-time satellite images from across the globe.
- Our platform has functionalities for inference, evaluation, visualization and fine-tuning on real-time satellite imagery using existing pre-trained building localization and damage assessment models.

May–Aug 2022 **Machine Learning Intern, Wadhwani AI**.
- Worked on 3D parametric model building using AMASS dataset (a large and varied database of adult human motion)
- Performed rigorous experiments to study the impact of 1) train set size and 2) mesh deformations on model's performance.
- Some insights from this work to be potentially used in Wadhwani AI's anthropometry project.

Jul–Nov 2020 **Machine Learning Intern, I3D Lab, IISc Bangalore**, *Pub. 2*.
- Worked on appearance-based gaze estimation systems.
- Performed rigorous experiments to come up with I2DNet, a novel architecture that achieved state-of-the-art subject independent gaze estimation accuracy.
- Conducted user-study in real-time interactive setting to validate our model's performance.
- Involved in building initial parts of the data collection software of PARKS-Gaze - A Precision-focused Gaze Estimation Dataset in the Wild under Extreme Head Poses.

Feb 2022 –Present **Collaboration with Ximira LLC.**.
- Working on assistive technology for the blind.
- Collecting pedestrian view-point dataset to work on curb/sidewalk detection (data collection in progress currently).

Publications

1 **A Dataset and Model for Crossing Indian Roads**
Brahmbhatt Siddhi, Awarded Best Paper (Indian Context) at ICVGIP 2022

2 **I2DNet - Design and real-time evaluation of an appearance-based gaze estimation system**
L R D Murthy, **Brahmbhatt Siddhi**, Somnath Arjun, Pradipta Biswas, Journal of Eye Movement Research.14, 4 (Aug. 2021)

3 **Solar powered motion detector for security in defence sector**
Brahmbhatt Siddhi, Champaneria Neel, Rana Harshit, Joshi Smita B, Journal of Environmental Research And Development.13, 1 (Sept. 2018)

Selected Projects

1 **Road Crossing Assistant** (Pub. 1) A full-stack AI project that includes everything from data collection to training ML algorithms and deploying them with an aim to help blind people cross Indian roads. (Funded by Govt. of Gujarat under SSIP).

2 **Learning From Data** Python implementations of concepts that I learnt from the online course "Learning From Data" by Professor Yaser Abu-Mostafa of Caltech.

3 **Toxic Comment Classification** A web application for toxic comment classification.

4 **Attendance System Using Face Recognition** A project capable to detect the faces in realtime using Rasberry PI, take attendance of recognized student from the database, and upload it to cloud. (Team-work for Smart Gujarat Hackathon 2020).

5 **Cozmo-Snakes and Ladders** Project to make Cozmo robot play the board game "Snakes and Ladders".

Online Course Certifications

1 Improving Neural Networks: Hyperparameter tuning, Regularization and Optimization from Coursera

2 Structuring Machine Learning Projects from Coursera

3 Neural Networks and Deep Learning from Coursera

4 Mathematics for Machine Learning Specialization of 3 courses from Coursera

5 Programming, Data Structures and Algorithms using Python from NPTEL - Score:88%, Top 2%

6 Data Base Management Systems from NPTEL - Score:91%, Top 1%

7 Learn to Program: The Fundamentals from Coursera

Leadership

2017–2019 **Member of institute's IEEE Student Branch**.
Managed and coordinated events under IEEE GCET SB

2019–2020 **Core Committee Member of institute's Computer Society of India Student Branch**.
Tech Lead and Documentation co-ordinator

2019–2020 **Co-ordinator of Departmental club - TechKnowTalk Club**.
Co-ordinated many technical talks (both by students and industry personnel)

Technical Skills

Programming Languages	Comfortable with: Python, C/C++ Familiar with: Java, MATLAB, R
Machine Learning	Comfortable with Pytorch, Tensorflow, OpenCV
Development	HTML, CSS, Flask(framework)
AI inference	Nvidia Jetson Nano
Other	AWS, Unity, SQL, Git, LaTeX