Rushali Mohbe

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EDUCATION

Northeastern University **Sept 2023 – Present**
Master's in Artificial Intelligence, Khoury College of Computer Science, GPA: 4.0/4.0 *Boston, Massachusetts*

Ramaiah Institute of Technology **Sept 2016 – May 2020**
Bachelor's in Computer Science and Engineering, CGPA: 9.39/10 *Bangalore, India*

RELEVANT COURSEWORK

Algorithms, Artificial Intelligence, Machine Learning, Deep Learning, Discrete Mathematics, Probability, Statistics, Linear Algebra, Data Structures, Computer Networks, Operating Systems, Database Systems.

EXPERIENCE

Institute for Experiential AI, Northeastern University **Sept 2023 – Present**
Software Analyst *Boston, Massachusetts*

- Developing a pipeline using Large Language Models to simulate war games to test epidemic preparedness strategies.
- Testing fairness and bias in the war games scenarios generated by generative models like LLMs.
- Predicting whether a disease outbreak alert from Promed will be significant enough to be flagged by WHO
- Assessing the risk associated with any new disease outbreak alert based on the alert text.

ArtPark, Indian Institute of Science (IISc) **June 2022 – June 2023**
R&D Engineer *Bangalore, India*

- Led the design and development of a scalable software solution to control and monitor teleoperated robot assistants. The beta version facilitated seamless robot control across continents, demonstrating minimal latency.
- Co-authored a workshop paper at 2nd Workshop Toward Robot Avatars @ ICRA 2023 titled "An Autonomous Mobile Robot based Tele-Presence System with Augmentation: A Pilot Trial of Virtual Museum Tour"
- Proposed a machine learning model for real-time viseme detection allowing for better control of an avatar's expressions and enhancing its realism.
- Engineered a web-based solution with the capacity to anonymize faces in video calls by mirroring facial landmark movements onto a 3-D avatar, ensuring both privacy and an interactive visual experience.

Robert Bosch Centre for Cyber-Physical Systems, IISc **Aug 2020 – June 2022**
Technical Assistant *Bangalore, India*

- Developed an end-to-end telepresence solution for a humanoid robot, enabling it to mimic the operator's arm movements, head pose, and facial expressions.
- Built a framework capable of identifying a person's facial expressions while wearing a virtual reality (VR) headset.
- Contributed to ZED SDK by fixing a bug preventing the video stream from being latched to the VR view.
- Employed speech-to-text along with phoneme/viseme recognition to enable a robot to mimic human speech in real-time.
- Distinguished as a semifinalist in the $10M ANA Avatar XPRIZE Competition. Played a pivotal role within a three-person team showcasing leadership, teamwork, and development skills.

Robert Bosch Centre for Cyber-Physical Systems, IISc **Oct 2019 – July 2020**
Research Intern *Bangalore, India*

- Synthesized a realistic simulation environment of the IISc using Unreal Engine. Various navigational algorithms for drones were trained and evaluated using this dynamic simulation to test the efficacy of drone delivery systems.
- Pioneered the development of a custom SLAM pipeline for autonomous aerial vehicle navigation, leveraging deep learning techniques for feature extraction.

GE Healthcare, Edison AI **Jun 2019 – Sept 2019**
Intern *Bangalore, India*

- Employed Nvidia Clara, an AI-assisted annotation tool, to curate a dataset of chest CT scans. Designed a machine learning model using this dataset to detect pneumothorax with an 84% accuracy.
- Created an interactive visualization using Neo4j to trace jupyter notebooks, datasets, and packages used by data scientists in the healthcare domain.

TEACHING EXPERIENCE

CSE11 Machine Learning, Ramaiah Institute of Technology **Jan 2020 - Jun 2020**
Undergraduate Teaching Assistant *Bangalore, India*

- Created supplementary course material for a better understanding of core machine learning ideas.
- Developed theory exercises to solidify comprehension of machine learning concepts and their applications.
- Designed lab exercises for students to gain hands-on experience.

PROJECTS

Explaining predictions of heart congestion from ECGs **Sept 2023**

- Proposing the use of LIME (Local Interpretable Model-Agnostic Explanations) to explain predictions made by popular machine learning models that detect the presence of heart congestion from time-series data.
- Using explanations to evaluate features chosen by popular machine learning model architectures.

Generalized aspect-based sentiment analysis **Mar 2020**

- Employed an unsupervised clustering algorithm to extract relevant aspect terms from reviews of any domain automatically. Sentiment analysis performed on the extracted terms could accurately cluster and identify sentiments.

Real-time Human segmentation | *Placed first at Bootstrap Paradox Hackathon* **Aug 2019**

- Implemented a model based on DeepLabV3+ to segment humans in a live stream to achieve high-quality segmentation while occupying minimal GPU memory.

Detection of eye diseases using Deep Learning | *Placed second at GE Precision Healthcare Hackathon* **Dec 2018**

- Built a Deep Learning model to analyze OCT scans of an eye to predict whether the the presence of Choroidal Neovascularization or Diabetic Macular Edema. Achieved a 98% accuracy whereas previous state-of-the-art models had 92% accuracy.

ACHIEVEMENTS

$10M ANA Avatar XPRIZE Competition | *Semifinalist* **2021**

Bootstrap Paradox Hackathon | *Won first place* **2019**

Mercuri Goldmann Skillathon | *Won first place* **2019**

RedHat Bit-by-Bit Hackathon | *Won second place* **2019**

GE Precision Healthcare Hackathon | *Won second place* **2018**

NMIT Hackathon | *Won first place* **2018**

16th Annual Student Unmanned Air Systems Competition | *Placed 1st in Asia, 10th worldwide* **2018**

15th Annual Student Unmanned Air Systems Competition | *Placed 2nd in Asia, 15th worldwide* **2017**

SKILLS

Programming: Python, R, C++, Java, SQL, Flask
Frameworks: Keras, PyTorch, Tensorflow, OpenCV, React, FastAPI, ROS, Neo4j
WebDev: JavaScript, Three.js, HTML/CSS
Utilities: Docker, AWS, Git, Jupyter Notebook

INTERESTS

Art: Nail art, Digital art, Watercolour painting
Sports: Boxing, Volleyball
Misc: Baking, Gardening, Aerial Silks, and Hula hooping