Pranay Reddy Anthireddy

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EDUCATION

University of Massachusetts, Amherst   Ongoing
Expected 2024
- **Major:** MS, Computer Science
- **Relevant Coursework:** Computer Vision, Distributed and Operating Systems, Systems for Data Science.

Indian Institute of Information Technology, Design and Manufacturing, Jabalpur   Ongoing
Expected 2022
- **Major:** B.Tech, Electronics and Communication Engineering
- **Relevant Coursework:** Probability & Random Processes, Image Processing, Digital Watermarking, Signals & Systems, Fundamentals of Robotics, Control System, Engineering Graphics, Blockchain, Computer Networks, Introduction to Computing, Data Structures and Algorithms.

RESEARCH EXPERIENCE

Carnegie Mellon University
Research Intern - Computer Vision   *Sep '21 - Current*
- Working with **Prof. Sebastian Scherer** and **Dr. Chen Wang** at Airlab in Robotics Institute on Object Oriented Scene Recognition using Graph Neural Networks
- Previosuly, proposed a brand new few-shot object detection model free of fine-tuning and improved baseline by up to 60% (even higher than carefully fine-tuned models). Work has been accepted at ECCV 2022.

Indian School of Business, Hyderabad
Research Intern - Computer Vision   *May '21 - Current*
- Working with **Dr. Sumeet Kumar** in finding product placements of various brands on YouTube-Kids videos.
- Proposed a multi-modal approach using Contrastive Domain Adaption and targeted sentiment analysis on a total of 100 classes and achieved an accuracy of 82%.

Japan Science and Technology Agency
Sakura Science Scholar   *May '15*
- Represented India at the JST Sakura Science Exchange Program that saw a participation from 15 countries.
- Explored the robotic advancements in Japan, performed hands-on live experiments with Japanese Nobel Laureates and interacted with mathematicians and researchers in the country.

PUBLICATIONS

[1] Bowen Li, Chen Wang, **Pranay Reddy**, Seungchan Kim, Sebastian Scherer, **"AirDet: Few-Shot Detection without Fine-tuning for Autonomous Exploration,"** (ECCV 2022, Accepted)   ⬈

PROJECTS

Catheter Positioning Tool   ⬈
Technologies: Keras,Tensorflow
- A positioning tool created using Semantic Segmentation to identify the nerve structure in Ultrasound Images and find a safe spot to administer catheter.
- Built and trained the model using U-Net architecture from scratch and achieved a dice coefficient of 75%.

GROUN - Get Rid of Your Notes   ⬈
Technologies: Keras, Tensorflow, Javascript
- GROUN is an application that can be used to delete the spam related to lecture slides/notes present in our devices without having to manually delete them.
- Built an image-classification model on a self prepared data set of over 12000 images by using image scraping techniques thereby achieving a validation accuracy of 95%.

Diet Monitoring System ⇗
Technologies: Keras, Tensorflow, Arduino, C++
- A prototype that identifies the food being fed and tracks the food habits of an animal so as to perform a comparative analysis with that of a healthy animal and deduce the reasons for its sickness.
- Developed the prototype using Arduino and designed the product under the mentorship of Dr. Ravi Panwar.

Digital Grading of Fruits ⇗
Technologies: PyTorch
- Built a grader to identify the grade (quality) of tomatoes using Machine Learning and Deep Learning approaches under the mentorship of Dr. Sunil Agrawal.
- Extracted custom features using Image Processing techniques and trained them on Random Forest and boosting algorithms thereby achieving a validation accuracy of 99%. Also trained the dataset on ResNet architectures (deep learning approach) and achieved a maximum accuracy of 75%.

Identification of COVID 19 using Chest X-Rays ⇗
Technologies: Keras, Tensorflow
- An attempt to identify potential COVID-19 cases using X-Ray images on a custom CNN architecture and interpreting the results through a confusion matrix.
- Trained the model on a custom designed CNN architecture trained from scratch and achieved a validation accuracy of 97%.

TECHNICAL SKILLS

- **Frameworks and Libraries:** PyTorch, Tensorflow, OpenCV, Flask, Keras
- **Tools and Languages:** Python, C/C++, MATLAB, Git, Docker
- **Academic Interests:** Computer Vision, Deep Learning, Machine Learning

SERVICE

- **Reviewer:** IEEE Robotics and Automation Letters (RA-L)

POSITIONS OF RESPONSIBILITY

Madhya Pradesh Association of Women Entrepreneurs
Project Assistant
- Involved in designing a strategy for the association to achieve its goal of empowering women entrepreneurs in their entrepreneurial journey.
- Managed the road map to an international conference,SWEEP-2019, which was focused on empowering MSME Women Entrepreneurs from 20 different countries.

Literary and Quizzing Society, IIITDM Jabalpur
Coordinator
- Orchestrated Quizzes, Poetry Nights, Literary Fests, Debates, etc
- Co-founded Jabalpur MUN Society and organised the first ever IIITDMJ-MUN with participation from all major institutions in the city.

ACHIEVEMENTS

- **Semi Finalist** at SBI NUMERO YONO QUIZ (Amaravati-2019) among **1500 participants**.
- **2nd Runner Up** at ChimeraX Quiz Jabalpur Regional (2019) among **500 participants**.
- **2nd Runner Up** at General Quiz held during INVICTA 2020, IIITDM Jabalpur among **40+ teams**.
- **Winner** of the Classmate Derek O'Brien's Faster Smarter Better Challenge Quiz (2013).