Praveen Kumar Ramesh

🌐 Website ✉ pbcpraveen@gmail.com in LinkedIn ⌗ GitHub

Education

Sri Sivasubramaniya Nadar College of Engineering (Affiliated to Anna University)   CGPA: 9.09
Bachelor of Engineering in Computer Science and Engineering   *2017 – 2021*

Experience

Goldman Sachs Inc.   *Bangalore, India*
Analyst   **Aug 2021 – Present**
Intern   **May 2020 - Jun 2020 & Jan 2021 – Jul 2021**
- Working on firm critical projects to extract statistical information from large data for further analysis.
- As an intern, worked on a POC to restructure large dataset to a graph for process optimisation.

Solarillion Foundation   *Chennai, India*
Research Assistant & Teaching Assistant   **Jan 2019 – Present**
- Led my team to study the effects of minimalist attacks on RL agents. We showed that by attacking less than 1% of the states, the performance can be brought down by 40%.
- We proposed a defense mechanism for patch-based attack on monocular depth estimators that reduced the RMSE error by 30%.
- As a teaching assistant, I have mentored 20+ undergraduates and helped them to understand the basics of programming and ML. I also helped in designing the ML and coding assignments.

Admatic Solutions   *Chennai, India*
Intern   **May 2019 – Jul 2019**
- Worked on various POCs to implement a low-cost smart teaching assistant.
- I Implemented depth detection algorithm for robot navigation in unconstrained environment.

Selected Publications

Critical State Detection for Adversarial Attacks in Reinforcement Learning (Accepted)   **ICMLA - 2021**
Defending Against Localized Adversarial Attacks on Edge-Deployed Monocular Depth Estimators   **ICMLA - 2020**
Species Recommendation using Machine Learning - GeoLifeCLEF 2019   **CLEF - 2019**

Selected Projects

TLDR | *Transfer Learning for Deep Reinforcement Learning*   **Apr 2021**
- We showed that pre-training in adversarial condition can make RL agents robust to environmental variations
- I actively contributed to the solution and implemented attacks for the agents.

Behavioral Model: Industry 4.0 | *Ford Hackathon*   **May 2020**
- We implemented various behavioural models to provide necessary feedback to a PLC using OPC DA protocol.
- I led the team, and designed and coded the core logic of the system. Our model secured the first place at the national level.

Smart Attendance Management System | *Smart India Hackathon*   **Feb 2020**
- We created a web app and synchronised it with a react-native mobile app to implement the system.
- I worked on implementing the face and voice recognition systems and interfaced it with flask.

K-Stack | *Angel Hackathon*   **Jul 2019**
- K-Stack is a web application that provides facilities to communicate with groups who share interests in same field of study.
- I worked on toxicity search and emotion analysis over text chats for the project.

Automated Number Plate Recognition System | *Industry Research Project*   **Jun 2019**
- We trained U-Net Model to segment number plate and an OCR model to recognise the character.
- I worked on ground truth creation for segmentation and authored the project code.

Technical Skills

Languages: Python, Java, C, C++, Bash, HTML/CSS, JavaScript, SQL, MATLAB, LaTeX
Frameworks: Tensorflow, Pytorch, OpenCV, Tkinter, Pandas, Numpy, Flask, React, Springboot, OrientDB
Technologies: Git, Subversion, Anaconda, Arduino, Andriod Studio, Linux, IntellIJ

Honors and Awards

★ Received merit scholarship for academic excellence in freshman year
★ Recipient of CTS scholarship for 3 consecutive years (2018-2021)
★ Won numerous coding competition in national symposium in Java and C
★ Secured top 5 percentile in International Youth Math Contest - 2020 edition

Extra-Currricular

★ Led the data science club in college for 2 years.
★ Volunteer at U&I, a NGO that provides quality education to those who cannot afford.
★ Served as a reviewer and conference chair at ICMLA 2021.
★ Campus ambassador for Global Education and Career Forum

Society Memberships

■ Institute of Electrical and Electronics Engineers (ID: 95416197)
■ Association for Computing Machinery (ID: 1749623)