

Praveen Kumar Ramesh

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Education

University of California, San Diego

Master of Science in Computer Science

Sep 2022 – Jun 2024 (Expected)

Anna University (Sri Sivasubramaniya Nadar College of Engineering)

Bachelor of Engineering in Computer Science and Engineering

CGPA: 9.09/10.0

Aug 2017 – Apr 2021

Experience

Goldman Sachs

Analyst

Bangalore, India

Aug 2021 – Aug 2022

Intern

May 2020 - Jun 2020 & Jan 2021 – Jul 2021

- Collaborated with teams across time zones to develop and manage a firm critical project to process statistical information from large data for further analysis of 1000's of business entities.
- As an intern, evaluated a proof of concept to restructure large dataset to a graph for process optimisation and alternate scenario analysis.

Solarillion Foundation

Research Assistant & Teaching Assistant

Chennai, India

Jan 2019 – Jul 2021

- Led a team to study effects of minimalistic attacks on RL agents. Demonstrated that by attacking less than 1% of states, performance can be brought down by 40%.
- Proposed and proved a defense mechanism for patch-based attack on monocular depth estimators that reduced RMSE error by 30%.
- Tutored more than 20 undergraduates and helped them to understand basics of programming and machine learning. Played a key role in structuring coding assignments.

Admatic Solutions

Intern

Chennai, India

May 2019 – Jul 2019

- Formulated and verified proof of concepts to build a low-cost smart teaching assistant and decrease latency to less than 0.1 seconds.
- Researched and implemented depth detection algorithm for robot navigation in unconstrained environment.

Technical Skills

Languages: Python, Java, C, C++, Bash, HTML/CSS, JavaScript, SQL, MATLAB, L^AT_EX

Frameworks: Tensorflow, Pytorch, OpenCV, Tkinter, Pandas, Numpy, Flask, React, Springboot, OrientDB, Vertx

Technologies: Git, Subversion, Arduino, Andriod Studio, Linux

Selected Publications

Critical State Detection for Adversarial Attacks in Reinforcement Learning

ICMLA - 2021

Defending Against Localized Adversarial Attacks on Edge-Deployed Monocular Depth Estimators

ICMLA - 2020

Selected Projects

Transfer Learning for Deep Reinforcement Learning | Undergraduate Thesis

Apr 2021

- Hypothesised and demonstrated that pre-training in adversarial condition can make reinforcement learning agents robust to environmental variations and increase its performance by 30% (on average).
- Collaborated with field experts and team members to propose a solution and performed attacks for RL agents.

Behavioral Model: Industry 4.0 | Ford Hackathon

May 2020

- Built and tested various behavioural models to provide necessary feedback to a PLC using OPC DA protocol to cut down cost of testing to nearly zero.
- Spearheaded team, and analysed and coded core logic of system. The model secured first place at national level.

Smart Attendance Management System | Smart India Hackathon

Feb 2020

- Developed and deployed a web application and synchronised it with a react-native mobile app to realise the system. Further enhanced system with AI based validation checks.
- Researched and trained face and voice recognition systems and interfaced it with flask micro-services.

K-Stack | Angel Hackathon

Jul 2019

- Created a web application to allow people to communicate with groups sharing interests in same field of study.
- Modeled and realised components for toxicity search and emotion analysis over text chats for the project.

Automated Number Plate Recognition System | Industry Research Project

Jun 2019

- Trained a U-Net Model to segment number plate and an OCR model to recognise characters for real-time application with short response time.
- Collected, cleaned and pre-processed data from various sources and authored code for proposed algorithm.

Honors and Awards

- ★ Graduated with 19th rank among 15,000 undergraduates from across state.
- ★ Received merit scholarship for academic excellence in freshman year.
- ★ Awarded CTS scholarship for 3 consecutive years (2018-2021).
- ★ Secured top 5 percentile in International Youth Math Contest - 2020 edition.

Extracurricular

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