Ravi Vivek Agrawal

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EDUCATION

University of Souhtern California   Los Angeles, CA
Master of Science in Computer Science   *Aug. 2022 – May 2024*
Coursework: Operating Systems, Quantum Computing and Cryptography, Multimodal Perception of Human Learning

Sardar Patel Institute of Technology   Mumbai, Maharashtra, India
Bachelor of Technology in Information Technology   *Aug. 2018 – May 2022*

EXPERIENCE

Graduate Research Programmer   May 2023 – Present
Autnomous Networks Research Group, USC   *Los Angeles, CA*

Scheduling Algorithms Gathered (SAGA)
- Developed code for **Dynamic Priority Scheduler, Look-ahead HEFT and generalized Scheduler** based on the algorithm in their respective research paper
- Developing a **reinforcement learning** based agent to generate efficient DAG for scheduling algorithms
- Explored ways to compare algorithms by gathering them under the same library for comparison on similar datasets

SafeCampusRL
- Developed a **Deep Deterministic Policy Gradient (DDPG) agent** to control and track spread of Covid-19 in a campus environment using Tianshou library based on Pytorch

Data Analyst Intern   Oct. 2021 – Nov. 2021
GlobalShala   *Gurgaon, India*
- Analysed Facebook ad data to provide insights regarding various ad campaigns to the finance department, using **Tableau** and **Scatterpolar** and various other plots using Plotly and Sklearn

Software Engineering Intern   May 2021 – July 2021
JPMorgan Chase & Co.   *Mumbai, India*
- Worked on multiple projects under Private Banking Divison of the Asset and Wealth Management Department
- Collaborated to work with big data and helped with standardising various data models of different data platforms into a unified format for ease of integration and developing a consistent "source of truth", using a **Springboot** application to automate the **CICD** pipeline with the help of **Jules and Jenkins** and python to extract data and from various files to form a consistent new source
- Led to automate scheduling and maintaining source control of **JIL (Job Interpretations Language)** files

PROJECTS

Weenix Operating System | *C, Git*   Jan 2023
- Implemented fundamental features of the Operating System such as **Processes and Threads, Virtual Filesystem** and **Virtual Memory** through C programming
- Operated with important **C** programming constructs, including **function pointer polymorphism**, and gained an in-depth understanding of process address spaces, parallelization, and **synchronization**

Intelligent Call Prioritization based on Speech Emotion Recognition | *Python, Node.js, Git*   Sept. 2021
- Implemented **BERT** for text-emotion extraction having an **82%** accuracy and **Random Forrest** for Speech Emotion Recognition having a **90%** accuracy
- Developed an algorithm to efficiently assign callers in a waiting queue to agents using **emotion based routing**

Road Classification and Subsequent Pothole Detection | *Python, Node.js, Flutter, React, Git*   Nov. 2020
- Created a custom **CNN** model to first classify images into different classes based on road type with a **92%** accuracy and then detect potholes using object detection model with a **89%** accuracy (**YOLO**) trained on potholes of corresponding road surface type
- Deployed a mobile app where the potholes where dynamically updated and reflected using **Google Maps API**

TECHNICAL SKILLS

Languages: **Java**, **C**, C++, Dart, **Python**, HTML, CSS, JavaScipt, TypeScript, PHP, XML, SQL, Rust
Frameworks: React, Node.js, Django, Springboot, JSP, Flutter, Visual Basic, TensorFlow, JUnit, WordPress
Databases: MySQL, PostgreSQL, PHPMyAdmin, MongoDB, Firebase, Firestore, Hadoop