Harshawardhan Mane

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Skills

- Programming – C, Python, Java, JavaScript, Typescript
- Web and Database – HTML | CSS | SQL | Flask | MongoDB | Agile Methodology | jQuery | NodeJS
- Frameworks – BOOTSTRAP | OPENCV | ReactJS | TENSORFLOW
- Tech – GIT | DOCKER/Kubernetes (Containerization) | MATLAB | Azure | AWS | Cloud Computing | APIs
- CYBERSECURITY and SCRIPTING – Cryptography and Cryptanalysis. Proficient in core Cybersecurity concepts and Threat analysis. Familiar with using popular tools like METASPLOIT, WIRESHARK, AIRCRACK-ng, NMAP, JtR, Kali, Python scripts for exploits, SQLi and web-based attacks and threat-mitigation. Familiar with CTF events.
- Front-end | Backend | Full-Stack | Systems Programming
- Languages – English, Hindi, Marathi - (Professional proficiency and above), Italian, Russian - (Beginner)

Projects and Hackathons

UWA Venture X Coders for Causes Hackathon (2023, Runner Up) –

- Sponsored by Microsoft and Wesfarmers Chemicals, Energy and Fertilizers.
- Created an **A.I. Model with Interface** used to transform lithium mining site photos into timelapse by shortlisting photographs with desired characteristics (**Color, Sharpness, Saturation, Contrast**) and filtering out the undesirable ones.
- Relevant techniques and algorithms used are **Fourier transform for Blur and Glare Detection**, **Histogram Analysis for image filtering and refinement** and **Tkinter in Python for GUI**. Cloud hosting option demonstrated with **system-less cloud infrastructure** as well as **Microsoft Azure Cloud**.
- The problem statement was presented and mentored by **Covalent Lithium Pty Ltd**.
- Secured the second prize after demonstrating the model to a panel of multiple judges and guests from across the industries.

Camera Calibration and Pose estimation –

- A **python-based AI Model** to **calibrate a set of cameras** and **determine their position** in the setting using a set of images.
- Implementation – **GUI in Tkinter**. **Object detection** using **Connected Component Analysis**. **Camera Calibration and Pose Estimation** by **triangulation and PnP Solving.**

Election Scenario Simulation –

- An **intelligent turn-based game in python** used to simulate political interference by two rival powerful countries (Blue and Red) in the election process of a third country (Green).
- **Decision Trees and Probabilistic graphs used to simulate the effect of campaigning** on electoral college (voters).
- **Visual demonstration** through python libraries.
- Players can choose to play as either blue or red team.
- The intelligent automated agent will play as the opponent.

Failure reporting, analysis, and corrective action system, for the UWA Motorsport Team, as part of the Curriculum

- A full-fledged **web application** to document prototyping process at the UWA Motorsport.
- Front-end built using **ReactJS and Typescript**
- Backend and Database Server built with **Flask and SQL**
- Project **Containerized with Docker** and hosted using **Amazon AWS**

Education

The University of Western Australia (2023),

Bachelor of Science, in Computer Science and Cybersecurity (Double Majors)