# Harshawardhan Mane

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## Skills

- Programming – C, Python, Java, JavaScript, Typescript
- Web and Database (Full Stack) – 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, JacktheRipper, Kali, Python scripts for exploits, SQLi and web-based attacks and threat-mitigation. Familiar with CTF events.
- Languages – English, Hindi, Marathi - (Professional proficiency and above), Italian, Russian - (Beginner)

## Projects and Hackathons

**UWA Venture X Coders for Causes Hackathon (2023) –**

- 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 - **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 prize after demonstrating the model to a panel of multiple judges and guests from across the industries.

**Camera Calibration and Pose estimation (2023) –**

- Created 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, python**. **Object detection** was implemented using **Connected Component Analysis**. **Camera Calibration and Pose Estimation** was done by using **triangulation and PnP Solving.**

**Election Scenario Simulation (2022) –**

- Created 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).
- Used **Decision Trees and Probabilistic graphs to simulate the effect of media campaigning** on electoral college (voters).
- Implemented **the Visualization** through python libraries.

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

- Created full-fledged **web application** to document prototyping process at the UWA Motorsport.
- Front-end built using **ReactJS and Typescript**
- Implemented the Backend and Database Server with **Flask and SQL**
- **Containerized the project with Docker** and hosted to a cloud server on **Amazon AWS**

## Education

**The University of Western Australia**

Bachelor of Science, in Computer Science and Cybersecurity (Double Majors)
*Hold a Graduate Work Visa Subclass 485 (exp. 2028) (Post Study Work Stream), Australia

## References

Mr. Liam Doherty, z/OS Infrastructure Modernization and Graduate Program Manager, 21CS Perth.
Email - liam.doherty@21cs.com
Mr. Deepak Deore, Senior Solutions Architect, HCL Technologies, Adelaide.
Email - deepakdeore@outlook.com