Harshawardhan Mane

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Skills

- **Programming –** C, Python, Java
- **Frameworks –** OpenCV, ReactJS, TensorFlow, Bootstrap, PyTorch
- **Web and Database –** HTML/CSS, Javascript, SQL (sqlite, postgres), Flask, MongoDB, Agile/CI-CD Methodology, jQuery, NodeJS, NestJS, Prisma for Postgres
- **Tech –** GIT, Docker/Kubernetes (Containerization), MATLAB, Cloud Computing (Azure, AWS, Proxmox), APIs, Linux, MS Office Suite, Jira/Confluence
- **Cybersecurity –** Cryptography, Cryptanalysis, Penetration Testing. Proficient in penetration testing techniques and tool suites (Kali Linux, NetHunter, OffSec Tool Suite etc.). Proficient in Scripting. Familiar with CTF and HacktheBox events.
- **Languages –** English, Hindi, Marathi, Sanskrit - (Professional proficiency and above), Italian, Russian - (Beginner)

Work Experience and Projects

Graduate Software Engineer, (April 2025 - Present) –
Yooli Health, Perth (Western Australia)

Venture X Coders for Causes Hackathon, University of Western Australia (2023) –

- Created a **Computer Vision Model** used to transform lithium mining site photos **(approx. 3000)** into time-lapse footage by shortlisting photographs with desired characteristics (**Color, Sharpness, Saturation, Contrast, etc.**) and filtering out the undesirable ones.
- Relevant techniques and algorithms used are **Fourier transform for Blur and Glare Detection using Low/High pass filtering in frequency domain (converting image as a digital signal into an analogue signal)**, **Histogram Analysis for image filtering and refinement, Hough Transform for edge detection**. Cloud hosting option demonstrated with **server-less cloud infrastructure** powered by **Microsoft Azure**.
- Event Sponsors – **Microsoft and Wesfarmers Australia.** Problem sponsor and mentor – **Covalent Lithium**
- **Tools, Libraries and Language(s) used –** Python, Numpy, OpenCV, Tkinter, Azure, ffmpeg

Algo-trading Platform (2024) –

- Created an **algorithmic-trading** program for self use, that is modular and containerized. Trading strategies can be coded as modules and imported into the environment. (Applied to chart and data).
- Primarily for **chart analysis and backtesting**. Subsequently, designed trading strategies for the same using **RSI Divergence and certain other oscillators (ATR etc.), and bollinger bands,** and applied to trading on **NYSE/NASDAQ** as well as **NSE/BSE** after thorough backtesting.
- **Tools, Libraries and Language(s) used –** Python, Numpy, Pandas, yFinance, Matplotlib, Tkinter

Camera Calibration and Pose estimation, University of Western Australia (2023) –

- Created a **Computer Vision Model** to **calibrate a set of cameras** and **determine their position** in the setting using a set of images captured from those cameras.
- Implementation – **Object detection** using **Connected Component Analysis and Sub-pixel Target Alignment**. **Camera Calibration and Pose Estimation** using **triangulation and PnP Solving. Camera matrix calibration data imported from cameras.**
- **Tools, Libraries and Language(s) used –** Python, Numpy, OpenCV, Tkinter

Election Scenario Simulation, University of Western Australia (2023) –

- Created an **intelligent turn-based game in python** used to simulate political interference by two rival powerful state-entities (Blue and Red) in the election process of a third state-entity (Green).
- **Decision Trees and Probabilistic graphs used to simulate the effect of campaigning** on electoral college (voters).
- Players can choose to play as either **blue or red team.** The intelligent automated agent will play as the opponent.
- **Tools, Libraries and Language(s) used –** Python, Matplotlib, Numpy, Tkinter

Education

The University of Western Australia (February 2021 – December 2023),
Bachelor of Science, in Computer Science and Cybersecurity (Double Majors)