Skanda Aithal

7676538902 aithalskanda66@gmail.com linkedin.com/in/SkandaAithal github.com/SkandaAithal-1

Education

Course	Institute	Score	Year
Bachelor of Technology	Indian Institute of Technology Kharagpur	**CGPA**: 9.23	**2026**
XII standard	Rashtrotthana Vidya Kendra	97.8%	**2022**
X standard	Sandeepan English Medium School	98.88%	**2020**

Experience

Subhead, Technology Robotix Society, IIT Kharagpur.
- Organised multiple events as a part of a team; presented bots on-stage; helped in troubleshooting participants bots
- Implemented path finding algorithms on the map of Kharagpur as a part of the assignments given in Winterschool

Perception Team Member, Aerial Robotics Kharagpur.
- Developing knowledge about Aerial Robotics and Computer Vision through suggested courses along with ROS
- As a part of 6 member team, took part in a drone building session and built a drone in a day with assistance

Associate Member, Kharagpur Data Analytics Group.
- Implemented Machine Learning algorithms from scratch and using ML frameworks like TensorFlow, PyTorch
- Participated in Kharagpur Open IIT Data Analytics competition as a part of a 20 member team

Intern, ARTPark, IISc
- Worked on Quadruped controls where I created a library for simulating the single rigid body physics on C++
- Developed the model to use as a reference for the Model Predictive Control(MPC) of the Quadruped

Projects

Lunar Rover Landing Simulation using Reinforcement Learning | *Python, TensorFlow*
- Applied **Reinforcement Learning** in Python using **TensorFlow** to land Lunar Rover in simulation by 'Gym'.
- Implemented **Deep-Q-Learning** using TensorFlow framework with the **reward policy** made with assistance.

Object Detector for a ball detection | *Python, PyTorch*
- Built an object detector to detect a ball in a given image along with the **bounding boxes** using Python and **PyTorch**.
- Used **data augmentation** and **transfer learning**, imported **FasterRCNN** with weights to train because of less data.

Tourist Arrival Prediction of Shimla Using Internet Search Index | *Python, PyTorch*
- Implemented a **Neural Network** on the monthly data from the Google Trends on some keywords and the actual monthly tourists data and then used it on the weekly data from Google Trends to generate an approximate actual weekly data.
- Applied **TFT**, **LSTM** and other **time series** models on the obtained weekly data to carry out predictions.

Localization in Known Environment | *Python, OpenCV*
- Realized **Markov's** localization on a given Maze with the help of local snapshots using Python and **OpenCV**.
- Used the local snapshot as a **kernel** and carried out **cross correlation** on the maze image to obtain the global maxima

ROS Project to Uncover Hidden Image | *Python, ROS*
- Implemented a **ROS node** to reveal a hidden image generated by a node with the help of the **feedback** provided by it.
- Made use of binary search iteratively for each pixel in the image based on the feedback provided to find the true values.

PPT Gesture Control | *Python, Mediapipe, OpenCV*
- As a group of 3 people made a program in Python using **Mediapipe** to control presentations using **hand gestures**.
- Used MediaPipe's **pose recogniser** to get body landmarks **real-time** and imposed conditions to recognise gestures.

Chimera - Quadruped (Ongoing) |
- Working in a team of 7 to design and build a **quadruped** mobile robot capable of robot locomotion on **uneven terrain**
- Conducted exhaustive literature review on leg topologies, joint configurations, gait trajectories, and actuator mechanisms

Technical Skills

Languages: Python, C/C++, HTML/CSS, JavaScript, LaTeX
Technologies/Frameworks: Linux, GitHub, TensorFlow, ROS, OpenCV, Arduino, NumPy, PyTorch, Scikit-Learn, CMake

Relevant Coursework

University: Advanced Calculus, Linear Algebra, Programming and Data Structures, Mechanics, Analog Circuits, Network Theory, Probability and Statistics, Digital Electronics(Ongoing), Signals and Systems(Ongoing), Systems and Control(Ongoing), Linear Algebra and Optimization(Ongoing).
Others: Machine learning Specialization, Deep Learning Specialization, Winterschool of AI and Robotics 2023, Introduction to Mobile Robotics by University of Freiburg(Ongoing), Introduction to Computer Vision(Ongoing), Deep Reinforcement Learning (UC Berkeley CS285)(Ongoing)

Achievements

- **AIR 1751** — JEE Advanced 2022
- **AIR 840** — JEE Mains 2022