Mohd Omama

https://mohdomama.github.io

Email: mohd.omama@research.iiit.ac.in

Telegram: padfoot7

Education

- **International Institute of Information Technology** — Hyderabad, India
  MS-Research (CSE), Robotics Research Center. CPI: 9.67/10 — *August 2020 - Present*
- **Zakir Husain College of Engineering and Technology, AMU** — Aligarh, India
  Bachelor of Technology in Computer Engineering. CPI: 9.503/10 — *August 2016 - August 2020*
- **Senior Secondary School Boys, AMU** — Aligarh, India
  Physics, Chemistry, Maths. Percentage: 86% — *August 2014 - April 2016*

Publications

- **Omama, M.**, Chinchali, S. and Krishna, K.M., 2021. Learning Actions for Drift-Free Navigation in Highly Dynamic Scenes. arXiv preprint arXiv:2110.14928. *Submitted to American Control Conference 2022.*
- Ozair, A., Bhat, V. and **Omama, M.**, 2021. Retractions and Withdrawals in Neurology Literature: A 2020 Analysis of the Retraction Watch Database (2668). *Published in American Academy of Neurology.*
- Jadon, A., **Omama, M.**, Varshney, A., Ansari, M.S. and Sharma, R., 2019. FireNet: a specialized lightweight fire smoke detection model for real-time IoT applications. arXiv preprint arXiv:1905.11922.

Patents

- Indian patent on **Modular Autonomous Underwater Vehicle for Algae Identification and Collection Using Particle Image Velocimetry.** Application Number- 201911015527, Journal Number- 20/2019, Journal Date- 17/05/2019. Patent application published.

Experience

- **IIITH (Robotics Research Center)** — Hyderabad
  Self Driving Car Team Lead — *January 2021 - Present*
  - Developed a self-driving system for Mahindra E2O Vehicle. The car can create an obstacle free trajectory in a cluttered environment and autonomously navigate through it.
  - **Technologies Used** : Lidar Odometry, Stanley Controller, CAN Bus, RangeNet++, ROS
- **IIITH (Robotics Research Center)** — Hyderabad
  System Administrator — *January 2021 - Present*
  - Managed a cluster of 4 ML compute servers for the lab. Handled identity management, networking, access-control and monitoring.
  - **Technologies Used :** IPA, Prometheus, Grafana, Linux Modules
- **Techolution** — Hyderabad
  Machine Learning Intern — *June 2019 - August 2019*
  - Worked on the development of a face recognition based locking system. Researched on Image Quality Analysis (IQA) for face recognition. Researched on spoof detection for face recognition based systems.
  - **Technologies Used :** Tensorflow, Keras, OpenCV, Python3
- **Softnerve Technologies** — Remote
  Software Development Intern — *April 2018 - June 2018*
  - Created back-end and data-processing tools for IoT based devices. Worked on the collection and analysis of sensor data and development of Neural-Network architectures to predict anomalies in smart homes.
  - **Technologies Used :** Spring Boot, Cassandra, MQTT protocol, Tensorflow
- **AUV-ZHCET**
  Computer and Vision Team Lead — *September 2018 - April 2020*

- Worked on vision, localization, perception, and path planning of an Autonomous Underwater Vehicle (AUV). The team made it to the final round in SAVe 2019 and secured 4th rank.
- **Technologies Used :** OpenCV, Python3, Tensorflow, Keras

- **AMU Roboclub**
  Electronics and Computer Team *September 2016 - March 2017*
  - Worked on feedback, control, and hardware interfacing of a manually controlled robot. The team made it to the second round in ABU Robocon 2017 and won the Judges and Referees Choice Award.
  - **Technologies Used :** Arduino, Embedded C, Eagle PCB

Projects

- **Virtual Stylus :** A gesture-driven alternate Human-Computer Interaction (HCI) interface. The project uses Computer Vision and Object Detection techniques to develop a Neural-Network model that precisely understands human hand gestures. This model is then be used to map gestures with system-specific tasks, giving the user an alternate way to interact with the computer.
- **Times Inquest :** A Django based website for news posting, feed, and verification.
- **ZHCET Bot :** An interactive Facebook chat-bot that can fetch college results.

Skills

- **Languages :** Python, Java, C, C++, Bash, MATLAB, SQL
- **Web Development :** Django, Flask, Spring Boot, SQLite, Firebase, Cassandra
- **Deep Learning :** TensorFlow, Keras, Caffe
- **Robotics :** Arduino, Raspberry Pi, Embedded C
- **Other Tools/Frameworks :** OpenCV, Git, GitHub, ZSH, Vim, LaTeX, TravisCI

Relevant Coursework

Deep Learning Specialization — Coursera, Django Fundamentals — Plural Sight, Machine Learning Crash Course — Google Developers, 6.006 Introduction to Algorithms — MIT, Networking for Web Developers — Udacity, Programming for Robotics — ETH Zurich

Activities

- **ACM ICPC :** Participated in ACM-ICPC 2017-18 programming competition and qualified for regionals round.
- **Code Jam :** Participated in Google Code Jam 2018 and secured 1704 rank.
- **Open Source :** Completed Hacktoberfest Challenge 2017, organised by Digital Ocean. Contributor at FOSSASIA, Hydra.
- **AMU-OSS (Admin/Mentor) :** Pioneered the development of college's first open source society, AMU-OSS. Its objective is to provide a platform for students to get acquainted and engage in the world of free/libre software. The community, at present, has more than 350 members.