Mohammad Omama

https://mohdomama.github.io

Email: mohd.omama@utexas.edu
LinkedIn: mohdomama

Education

- **The University of Texas at Austin** — Austin, USA
  PhD, Swarm Robotics Lab — *August 2023 - Present*
- **International Institute of Information Technology (IIITH)** — Hyderabad, India
  MS by Research (CSE), Robotics Research Center. CGPA: 9.67/10 — *August 2020 - July 2023*
- **Zakir Husain College of Engineering and Technology, AMU** — Aligarh, India
  Bachelor of Technology in Computer Engineering. CPI: 9.38/10 — *August 2016 - August 2020*

Publications

- **Omama, M.**, Li, P. H., and Chinchali, S. P. (2024). *Exploiting Distribution Constraints for Scalable and Efficient Image Retrieval. arXiv preprint* arXiv:2410.07022. Submitted to **International Conference on Learning Representations (ICLR) 2025**.
- Choi, M., **Omama, M.**, Goel, H., Yang, Y., Shah, S., and Chinchali, S. (2024). *Neuro-Symbolic Video Search. arXiv preprint* arXiv:2403.11021. **European Conference on Computer Vision (ECCV) 2024, Oral Presentation**. https://utaustin-swarmlab.github.io/nsvs-project-page.github.io/
- Shubodh, S., **Omama, M.**, Zaidi, H., Parihar, U. S., and Krishna, M. (2024). *Lip-loc: Lidar Image Pretraining for Cross-Modal Localization.* In Proceedings of the **IEEE/CVF Winter Conference on Applications of Computer Vision** (pp. 948-957). https://liploc.shubodhs.ai/
- Jatavallabhula, K. M., Kuwajerwala, A., Gu, Q., **Omama, M.**, Chen, T., Li, S., ... and Torralba, A. (2023). *Conceptfusion: Open-Set Multimodal 3D Mapping. arXiv preprint* arXiv:2302.07241. **Robotics Science and Systems (RSS) 2023**. https://concept-fusion.github.io/
- **Omama, M.**, Inani, P., Paul, P., Yellapragada, S. C., Jatavallabhula, K. M., Chinchali, S., and Krishna, M. (2023). *ALT-Pilot: Autonomous Navigation with Language-Augmented Topometric Maps. arXiv preprint* arXiv:2310.02324. https://navigate-anywhere.github.io/ALT-Pilot/
- **Omama, M.**, Sriraman, S. S. V., Chinchali, S., Singh, A. K., and Krishna, K. M. (2022). *Drift-Reduced Navigation with Deep Explainable Features. arXiv preprint* arXiv:2203.06897. **Intelligent Robots and Systems (IROS) 2022**.
- **Omama, M.**, Chinchali, S., and Krishna, K. M. (2021). *Learning Actions for Drift-Free Navigation in Highly Dynamic Scenes. arXiv preprint* arXiv:2110.14928. **American Control Conference (ACC) 2022**.

Experience

- **Lead, Self-Driving Car Team** — Hyderabad
  IIITH (Robotics Research Center) — *January 2021 - June 2023*
  - Developed **AutoDP**, a comprehensive autonomous driving software suite, successfully deployed on a full-sized vehicle, now functioning as an on-campus shuttle. Extended AutoDP as a research platform, which is currently utilized by several graduate students. https://robotics.iiit.ac.in/auto_dp/.
- **System Administrator** — Hyderabad
  IIITH (Robotics Research Center) — *January 2021 - June 2023*
  - Managed a cluster of four machine learning compute servers for the lab. Handled identity management, networking, access control, and monitoring.
- **Machine Learning Research Intern** — Hyderabad
  Techolution — *June 2019 - August 2019*
  - Worked on the development of a face recognition-based locking system, focusing on Image Quality Analysis (IQA) to enhance face recognition and implementing spoof detection mechanisms in face recognition systems.