Ghanta Sai Krishna

Google Scholar | Github | Linkedin | ghanta20102@iiitnr.edu.in | +1-502-821-2059

EDUCATION

1. Franklin College of Arts and Sciences, University of Georgia, Athens **August 2024 - June 2027**
PhD in Artificial Intelligence *GPA:* **3.97/4**

2. Dr. SPM International Institute of Information Technology **November 2020 - June 2024**
Bachelor of Technology in Data Science and Artificial Intelligence *GPA:* **8.96/10**

- Dean's List of Academic Excellence Award 2021, 2023

2. FIITJEE, Board Of Secondary Education Andhra Pradesh **June 2018 - March 2020**
Secondary Education *GPA:* **9.94/10**

- Secured 99.5 percentile in India's largest entrance exam JEE with over 10+ Lakh Test Takers - Math and Physics

EXPERIENCE

1. HeRoLab Lab, School Of Computing UGA **August 2024 - April 2025**
Graduate Research Assistant, Advisors: Dr. Ramviyas Parasuraman *Athens, Georgia*

- Developed an online 3D spatial exploration framework (SPACE) for multi-robot systems utilizing situational awareness and dynamic filter to mitigate ghosting trail effect in 3D reconstructions.
- Introduced a distributed multi-robot relative localization approach (MGPRL) leveraging uncertainty-aware Gaussian Processes and Wi-Fi RSSI signals for robust, efficient pose estimation in GPS-denied environments.
- Currently working on Multi-Agent Robot Task Planning using Large Language Models with a focus on visual reconstructions for embodied multi-robot task allocation.

2. Louisville Automation & Robotics Research Institute **January 2023 - June 2024**
Visiting Research Intern (Summer 2023), Advisor: Dr. Sabur Baidya, Dr. Madan Mohan *Kentucky, USA*

- Developed 3DS-SLAM, a real-time 3D Object Detection in the Visual SLAM with RGB-D and LiDAR.
- Investigated on reliability of Camera-LiDAR sensor fusion calibration mechanisms for robotics use-cases.
- Worked on developing Physical Twin with Franka Emika Panda robotic arm and Haption Virtuose 6D RV.

3. Samsung R&D Institute, India **July 2022 - January 2023**
AI Research Intern *Remote*

- Designed and Developed Deep Learning based Generative Adversarial Networks (GAN) approaches for synthetic data generation for Optical Character Recognition (OCR) in Bixby Vision.
- Streamlined ViTGAN, designed morphological operations for handwritten text synthetic data generation for OCR.

4. SOIL Ltd - School of Innovation and Leadership **September 2021 - December 2021**
Machine Learning Intern *Hyderabad, India*

- Worked on implementing an NLP-based curation engine to assess the educational materials with OCR.
- Constructed an integrated NLP and CV pipeline to recognize the hand-written text and text summarization consolidated with harmful corpus detection in educational materials for 6D educational model.

5. Data Science Lab, IIIT Naya Raipur **January 2021 - August 2021**
Undergraduate Research Assistant, Advisors: Dr. Santosh Kumar, Dr. Mallikharjuna Rao K *Naya Raipur, India*

- Developed a scalable AI systems such as LIPAR: a person independent spatio-temporal visual speech recognition system via a mobile application, ViTDD: Vision Transformers based Drowsiness detection in real-time.
- Partly lectured, graded quizes for Data Preprocessing, Statistical Learning Theory, Representation Learning

POSITIONS OF RESPONSIBILITY

1. Secretary of Artificial Intelligence and Machine Learning Club, IIIT Naya Raipur June 2021 - June 2022
2. Student Volunteer at National Service Schema, NSS - IIIT Naya Raipur December 2020 - June 2021
3. IEEE Student Member Jan 2022 - Present
4. Technical Reviewer IEEE AiDaS 2023 and IROS 2025

TECHNICAL SKILLS

1. **Programming Languages**: Python, C, C++, HTML, CSS
2. **ML Frameworks**: OpenCV, Open3D, NLTK, Tensorflow, PyTorch, Pyspark, CUDA, cuDNN, OpenAI API.
3. **Robotic Frameworks**: ROS, Gazebo, RViz, PCL, MoveIt, V-REP.
4. **Cloud and Database**: Azure AI Search, ML Studio, MS SQL

ACHIEVEMENTS

1. Recipient of International Travel Grant of 2500$, 6000$ - IIITNR's TEQIP II 2023,2024
2. Recipient of Travel Grant for TENCON2023 Conference 1200$ - IIITNR's TEQIP 2023
3. 1st Position (2400+ developers): Ernst and Young GDS (EY-GDS) Hackpions 3.0 2021
4. Recipient of the 100 Percent Scholarship honor in 10+2 Pre-University Programme - FIITJEE 2016

PUBLICATIONS

1. **Ghanta Sai Krishna**, and Ramviyas Parasuraman. "SPACE: 3D Spatial Co-operation and Exploration Framework for Robust Mapping and Coverage with Multi-Robot Systems." arXiv preprint arXiv:2411.02524 (2024), submitted to IEEE IROS 2025.

2. **Ghanta Sai Krishna**, and Ramviyas Parasuraman. "MGPRL: Distributed Multi-Gaussian Processes for Wi-Fi-based Multi-Robot Relative Localization in Large Indoor Environments.", submitted to IEEE IROS 2025.

3. **Ghanta Sai Krishna**, Kundrapu Supriya, and Sabur Baidya. "3DS-SLAM: A 3D Object Detection based Semantic SLAM towards Dynamic Indoor Environments." arXiv preprint arXiv:2310.06385 (2023), submitted to IEEE IROS 2025.

4. P. Nemani, **Ghanta Sai Krishna**, N. Ramisetty, B. D. S. Sai and S. Kumar, "Deep Learning based Holistic Speaker Independent Visual Speech Recognition," in *IEEE Transactions on Artificial Intelligence*, 2022, doi: 10.1109/TAI.2022.3220190.

5. **Ghanta Sai Krishna**, Kundrapu Supriya, and Sabur Baidya. "Adversarial Security and Differential Privacy in mmWave Beam Prediction in 6G networks." IEEE CSNet 2023.

6. Mallikharjuna Rao, K., **Ghanta Sai Krishna**, and Kundrapu Supriya. "Data preprocessing techniques: emergence and selection towards machine learning models-a practical review using HPA dataset." Multimedia Tools and Applications (2023): 1-20.

7. P. R. Medi, P. Nemani, **Ghanta Sai Krishna**, S.Vollala, "A Novel end-to-end Framework for Occluded Pixel Reconstruction with Spatio-temporal Features for Improved Person Re-identification," IEEE 2023 8th International Conference on Business and Industrial Research

8. **Ghanta Sai Krishna**, Dyavat Sumith, and Garika Akshay. "Epersist: A Two-Wheeled Self Balancing Robot Using PID Controller And Deep Reinforcement Learning." 2022 22nd International Conference on Control, Automation and Systems (ICCAS). IEEE, 2022.

9.**Ghanta Sai Krishna**, et al. "dScout: Unmanned Ground Vehicle for Automatic Disease Detection and Pesticide Atomizer." 2022 IEEE 7th International conference for Convergence in Technology (I2CT). IEEE, 2022.

10. P. Nemani, **Ghanta Sai Krishna**, K. Supriya and Santosh Kumar, "Speaker Independent Visual Speech Recognition: A Systematic Review and Futuristic Applications", *Elsevier Journal of Image and Vision Computing 123 (2023)*

11. **Ghanta Sai Krishna**, Anmol Agarwal, Aparna Sinha and Debanjan Da. "Thermographic Fault Diagnosis: An eXplainable Compact Vision in Transformer Approach for Electrical Machine" submitted to IEEE Sensors Journal.