Sai Ram Kasanagottu

+1 (631) 682-6319 | sairam.kasanagottu@gmail.com | LinkedIn | GitHub | Google Scholar

Education

SUNY Stony Brook University — New York
Ph.D Student, Computer Science — *2024 – Present*

Indian Institute of Technology, Kharagpur — Kharagpur, India
Master of Science (Research), Computer Science and Engineering (CGPA 9.53/10) — *2023*

- Thesis: Developing Reusable, Speedy, and Compact Deep CNN Models

Indian Institute of Technology, Kharagpur — Kharagpur, India
B.Tech in Electronics and Electrical Communication Engineering (CGPA 7.95/10) — *2014*

- Thesis: Navigational Signal Processing of GNS signal to estimate user location

Technical Skills

Programming: Python, C, C++, Java, Julia, HTML, CSS, LaTeX, Verilog, MATLAB
Frameworks: VLA, VLM and Diffusion Policy, HuggingFace, OpenCV, PyTorch, TensorFlow, Matplotlib, NumPy, Pandas, ROS, Gazebo, FastAPI, OpenMP, MPI
Simulator: Isaac Sim & Lab, MuJoCo, Webots, MATLAB, Simulink, Blender

Experience (Work & Research)

Research Assistant — May 2025 – Present
Knowledge Systems & IRSL Lab, Stony Brook University (SBU) — *Stony Brook, NY*

- Minimized human demonstration burden in active kinesthetic learning, as measured by increased sample efficiency, by integrating PAC learning and bandit algorithms into a screw-geometry-based motion planning pipeline.
- Advancing autonomous navigation for mobile manipulators, as measured by successful SLAM deployment, by developing targeted algorithmic solutions on a Segway platform mounted with a Kinova Gen3 arm.
- Establishing a scalable humanoid navigation system, as demonstrated by precise multi-sensor alignment, by engineering a camera and LiDAR calibration setup for the Unitree G1 bipedal robot.

Technical Lead Engineer — Aug. 2023 – Aug. 2024
Saama Technologies Inc — *Pune, India*

- Achieved 50% effort reduction and 69% faster timelines in automated SDTM generation by engineering specialized prototypes and an NLP-driven ETL pipeline for a Generative AI endpoint.
- Generated analytical TLF data and structured clinical information by designing an LLM mapping system utilizing Amazon Bedrock, Azure OpenAI, Langchain, and LlamaIndex.
- Adapted Llama2 and Mistral models to the clinical domain by utilizing sequential and Chain of Thought fine-tuning prompts.

Lead ML/ Deep Learning/ Computer Vision Engineer — March 2021 – Nov. 2022
DisplaySweet — *Melbourne, Australia*

- Enhanced spatial analysis and visualization by developing deep learning algorithms for 3D mesh optimization, OCR, and semantic floor plan parsing.
- Substantially increased productivity by developing an AI agent for customer analysis and integrating automated project schedule estimations.

Deep Learning Software Engineer — Nov. 2018 – Aug. 2019
Kinara, Inc - MLAI System — *Los Altos, CA / Hyderabad*

- Secured a model compression patent by designing an automated mixed-bit quantization and pruning algorithm for the end-to-end Compiler workflow.
- Optimized edge computing performance by resolving complex integration issues with video-based segmentation and pruning strategies.

Project Officer — Oct. 2017 – March 2019
Indian Institute of Technology, Kharagpur — *Kharagpur, India*

- Accelerated CNN inference natively on embedded devices by designing a hierarchically self-decomposing CNN and a converging fitness-based layer rank selection algorithm.

Junior Research Fellow (MHRD-CSE) Dec. 2014 – Sept. 2017

Indian Institute of Technology, Kharagpur *Kharagpur, India*

- Achieved autonomous tracking and landing on moving objects by engineering aerial vehicles driven by an optical flow-based state estimation algorithm.
- Validated autonomous navigation systems by developing AI-based path planning strategies natively within a Gazebo simulation environment.

Assistant Manager - LED Development July 2014 – Oct. 2014

Philips Electronics India *Noida, India*

- Scaled IoT-adapted lighting products to mass production standards by prototyping a scene switch LED bulb and collaborating with manufacturers for qualification.

Research Intern May 2013 – June 2013

Indian Institute of Technology, Kharagpur *Kharagpur, India*

- Project: Effective Panoramic image generation from video sequence (Supervisor: Dr. Prabir Kumar Biswas).

Research Intern June 2012 – July 2012

Variable Electron Cyclotron Centre *Kolkata, India*

- Project: Design and Implementation of IQ Phase Shifter for LLRF Control System (Supervisor: Dr. S. Bhattacharya).

Publications

1. R. Bradbury, A. S. Ashok, **Sai Ram Kasanagottu**, G. Jhingran, and S. Meng. "Deterministic Continuous Replacement: Fast and Stable Module Replacement in Pretrained Transformers," *arXiv preprint arXiv:2511.18670*, 2025.

2. A. Saha, **K. S. Ram**, J. Mukhopadhyay, P. P. Das, and A. Patra. "Fitness based layer rank selection algorithm for accelerating CNNs by candecomp/parafac (CP) decompositions," *2019 IEEE International Conference on Image Processing (ICIP)*, Sep. 2019.

3. **SaiRam, K.**, J. Mukherjee, A. Patra, and P. P. Das. "HSD-CNN: Hierarchically self-decomposing CNN architecture using class specific filter sensitivity analysis," *11th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP 2018)*, ACM, 2018.

4. B. Saha, **K. Sai Ram**, J. Mukhopadhyay, A. Roy, and A. Navelkar. "Video based person re-identification by re-ranking attentive temporal information in deep recurrent convolutional networks," *2018 25th IEEE International Conference on Image Processing (ICIP)*, Oct. 2018.

5. J. Mukhopadhyay and **K. Sairam**. "Nonseparable filters for images in the block DCT domain," *2018 25th IEEE International Conference on Image Processing (ICIP)*, Oct. 2018.

Patents

1. W. Qadeer, R. Hameed, S. R. Uppalapati, A. B. Ghanore, and **Kasanagottu Sai Ram**. *"Method for automatic hybrid quantization of deep artificial neural networks."* US Patent App. 17/112,889. Filed: June 10, 2021.

Fellowships & Awards

Computer Science Chairman Fellowship Award | *Stony Brook University* 2024 – 2025

Junior Research Fellowship (MHRD) | *Indian Institute of Technology, Kharagpur* 2015 – 2017

Best Team Cooperation Award (International Aerial Robotics Competition) | *Beijing* 2016

Merit cum Means Scholarship | *Indian Institute of Technology, Kharagpur* 2011 – 2013

Teaching Assistantship

Foundations of Computer Science | *Stony Brook University* Fall 2024, Spring 2025

Advanced Image Processing and Computer Vision | *IIT Kharagpur* Spring 2018

Digital Image Processing | *IIT Kharagpur* Fall 2015, Spring 2017

Computer Graphics and Laboratory | *IIT Kharagpur* Spring 2016

Programming and Data Structures | *IIT Kharagpur* Fall 2016