

Santhoshini Reddy Gongidi

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Impact-driven research engineer on a mission to build safe, efficient AI systems.

Education

Carnegie Mellon University - School of Computer Science

Master of Science in [Computer Vision](#) (GPA: 4.20/4.0)

Pittsburgh, PA

December 2025

International Institute of Information Technology (IIIT), Hyderabad

Master of Science in [Computer Science & Engineering](#) by Research (CGPA: 8.67/10)

Hyderabad, India

December 2022

Research Experience

[Geometry-Driven Robot Learning](#) ([3D VLA](#))

January 2025 - Present

Advisor: Jeffrey Ichnowski

Momentum Robotics Lab, CMU

- Adapted **multi-view geometric transformers** (VGGT) for robotic manipulation, showing that intermediate features from unposed RGB images can match RGB-D inputs in imitation learning.
- Fine-tuning open-source **vision-language-action models** (OpenVLA, π -FAST) with depth-aware priors from geometric transformers, enabling richer 3D scene reasoning for action planning.

[Text-aware 1D Image Tokenizers](#) ([Parameter Efficient GenAI](#))

January 2025 - May 2025

Instructor: Yonatan Bisk

CS 11-777 Research, CMU

- Trained from scratch mini-versions of **Google's ViT image tokenizer** to evaluate their efficiency for text-conditioned, identity-preserving image super-resolution with latent Diffusion Transformers (DiT).

[Image-to-Text Modeling](#) ([Parameter Efficient Training](#))

January 2019 - July 2021

Advisor: Prof. C. V. Jawahar

CVIT Lab, IIIT Hyderabad

- Proposed a multi-head joint training method for CNN-BiLSTM Seq2Seq image-text recognition models, boosting feature learning and slashing **average error rates by 15% on Latin** and 20% on Indic datasets.

[Embedding based Image Search](#) ([Vector Retrieval](#))

June 2018 - December 2018

Advisor: Prof. C. V. Jawahar

CVIT Lab, IIIT Hyderabad

- Built a **real-time** multimodal handwritten search engine by training ResNet and hierarchical text encoders with similarity loss, achieving **zero-shot retrieval with 0.86** top-10 precision.

Work Experience (Most impactful contribution)

Research Engineer Intern - Multimodal Sensor Fusion

May 2025 - August 2025

Plus.ai ([Perception for Autonomous Vehicles](#))

California, USA

- Improved **BEV grid localization and robustness by ~7%** by extending the perception stack from camera-only to multimodal with 4D imaging radar.

Applied Scientist

July 2021 - November 2023

Micron Technology ([AI for Industrial Intelligence](#))

Hyderabad, India

- Saved **\$5.6M across three use cases** by achieving 90% recall in wafer anomaly detection with instance segmentation, and scaling the solution to production.
- Led a cross-functional team of 3 to develop ML inference pipelines and image auto-labeling tools.

ML Research Assistant

June 2018 - December 2021

CVIT, IIIT Hyderabad ([AI for Document Intelligence](#))

Hyderabad, India

- Released a large-scale dataset of **over 10M samples across multiple Indian scripts**, advancing research in text recognition and retrieval for low-resource languages.

[Google Scholar](#), [Thesis](#)

ML Research Intern

May 2017 - July 2017

CVPR Unit, Indian Statistical Institute

Kolkata, India

- Proposed a stroke-based clustering approach and autoencoder-enhanced representations for handwriting analysis, achieving 93% (Top-1) and 99% (Top-10) accuracy on Latin and Indic datasets.

Skills

Programming languages & Databases: Python, PostgreSQL, C++ (Beginner), [Triton](#) (Beginner)

Frameworks & Libraries: [PyTorch](#), PyTorch3D, Detectron2, MMDetection3D, [Open3D](#)

Tools & Platforms: Docker, [GCP](#), [AWS](#), Kubernetes, MLflow, [Slurm](#) (HPC)

Publications

(Peer-reviewed Conferences)

INDIC-HW-WORDS: A Dataset for Indic Handwritten Text Recognition

[ICDAR 2021](#)

Santhoshini Gongidi, C V Jawahar

Consonant-Vowel Sequences as Subword Units for Code-Mixed Languages

[AAAI 2018](#)

Upendra Kumar, Vishal Singh Rana, Chris Andrew, Santhoshini Reddy, Amitava Das

Handwritten Text Retrieval from Unlabeled Collections

[CVIP 2021](#)

Santhoshini Gongidi, C V Jawahar

Writer Identification in Indic Scripts: A Stroke Distribution Based Approach

[ACPR 2017](#)

Santhoshini Reddy, Chris Andrew, Umapada Pal, Alireza Alaei, Viswanath Pulabaigari

Text Independent Writer Identification for Telugu Script Using Directional Filter Based Features [ICDAR 2017](#)

Chris Andrew, Santhoshini Reddy, Viswanath Pulabaigari, Umapada Pal

Awards & Scholarships

Bravo! Internal Recognition Award - Micron Technology

2021, 2022

Gold Medalist for highest GPA in CS department - IIIT Sri City

2018

ACM-W Travel Scholarship

2017

Grace Hopper's Celebration India Scholarship

2017