

# SRAVANTH KODAVANTI

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## About

Research Engineer specializing in **post-training optimization** and **efficient AI** for real-world impact across **language** and **vision** models. Skilled in advanced **inference optimization**, **model compression** (quantization), and **Neural Architecture Search**, delivering performance improvements in both industrial and research projects. Passionate about bridging cutting-edge AI methods with scalable solutions to address practical business needs.

## Education

### Indian Institute of Technology, Hyderabad

Bachelor of Technology, Major - Computer Science and Engineering, Minor - Entrepreneurship

2020 - 2024

CGPA - 8.58

## Research Publications

1. Subhajit Sanyal\*, Srinivas Miriyala\*, Akshay Bankar\*, Manjunath Arvetti, Sowmya Vajrala, Shreyas Pandith, *Sravanth Kodavanti*, Abhishek Ameta, Harshit, Amit Unde  
**NanoSD: Edge Efficient Foundation Model for Real Time Image Restoration**,  
Under Review at CVPR 2026
2. *Sravanth Kodavanti\**, Srinivas Miriyala\*, Sowmya Vajrala\*, Vikram N R, Sharan Allur  
**Edge-Efficient Image Restoration: Transformer Distillation into State-Space Models**,  
Under Review at CVPR 2026
3. Sowmya Vajrala\*, Srinivas Miriyala\*, *Sravanth Kodavanti*  
**Towards Efficient Image Deblurring for Edge Deployment**,  
Under Review at ICASSP 2026
4. *Sravanth Kodavanti\**, Sowmya Vajrala\*, Srinivas Miriyala\*, Utsav Tiwari\* et al  
**Unlocking the Edge Deployment and On-Device Acceleration of Multi-LoRA Enabled One-for-All Foundational LLM**, Manuscript under revision
5. Srinivas Miriyala\*, Sowmya Vajrala\*, Hitesh Kumar, *Sravanth Kodavanti*, Vikram N R  
**Mobile-friendly Image De-noising: Hardware-Conscious Optimization for Edge Application**,  
ICASSP 2025

## Patents

1. *Sravanth Kodavanti\**, Srinivas Miriyala\*, Sowmya Vajrala\*  
**System and Method for Accelerating On-Device Large Language Model Inference**.  
**Provisional Specification Filed**. Proposes a novel self-speculative decoding technique to significantly improve efficiency and reduce latency in LLM inference on edge devices.

## Work Experience

### Samsung Research Institute Bangalore Machine Learning Research Engineer

Aug 2024 - Present

Mentor: *Dr. Srinivas Miriyala*

- Developing **Samsung Neural Acceleration Platform** for AI model acceleration and deployment on mobile devices, leveraging **Neural Architecture Search (NAS)**, **Quantization** and other techniques for performance optimization.
- **Commercialization & Impact:**
  1. Accelerated inference speed or the **Samsung LLM Gauss - L, 3B/3.5B Model** by implementing
    - \* **Speculative Decoding**, achieving a **2X improvement** in tokens per second (toks/sec), Successfully integrated into the **Samsung S25 series**.
    - \* Developed **PULSE**: a novel in-house **self-speculative decoding** algorithm, achieving a **5X improvement** in tokens per second (toks/sec). Method targeted for **Samsung S26 series**.

- 2. Developed **NAS** and **quantization** driven models delivering advanced, commercialization-ready imaging solutions, including:
  - \* UNet-based model for **low-light video de-noising** ( $2.5\times$  speedup; deployed on **Samsung Galaxy A56**),
  - \* UNet-based model for **demmoire artifact removal** ( $2.2\times$  speedup; targeted for **Galaxy S26**),
  - \* Stable Diffusion-based model for **text-to-image generation, motion photo enhancement, and related use-cases** ( $2.3\times$  speedup; targeted for **Galaxy S26**)

- **Awards & Recognition:**

1. **Spot Award (Q2 2025)** – For novel speculative decoding algorithm enhancing LLM acceleration.
2. **MD Project Incentive Award (2024–25)** – For AI model optimizations and deployment on edge devices.
3. **Team Awesome Award (Q4 2024)** – For on-device optimization of **Samsung Gauss - L** in **S25** mobile series.

### **Stealth Startup - Gika.AI**

**AI Researcher**

**June 2024 - Sep 2024**

**Mentor: Dr. Manoj Aggarwal**

- Developed domain-specific search engines leveraging **Knowledge Graphs** (KG) to enhance semantic accuracy. Improved **Retrieval Augmented Generation** by using KG over vector databases for more precise, context-aware retrieval.
- Handled **Coreference** and **Entity Resolution** for fine-tuning data using LLMs such as **GPT-4**, **GPT-4o**, **LLAMA3**, **SpanBERT**, and **LingMess** with the **SpaCy** AI framework.

### **Hexagon R & D India**

**Machine Learning Intern**

**Jan 2024 - June 2024**

**Mentor: Ankan Sengupta**

- Developed a website for implementing segmentation & classification based on tags of various manufacturing plant sketches. Used various segmentation algorithms such as **RANSAC**, **DBSCAN**, **K-Means**.
- Used **Azure form recognizer** models & other OCR models for tag identification.
- Developed a **flask website** for text recognition on manufacturing plant sketches using **Form**, **Doc Recognizer** & also used OCR models for tag identification.
- Involved in an **LLM** research project. Compared the results for text generation between **Mixtral**, **Mistral**, **LLAMA2**.

### **OnePlus / Oppo (OPLUS) Mobiles India R & D**

**Research Intern - Device AI**

**Jan 2023 - June 2023**

**Mentor: Dr. C Shyam Anand**

- Implemented model compression techniques called **Quantization**, **Pruning** & **Distillation** on various deep learning models such as **ResNet**, **Yolo**, **ViTs**, **ConvNeXt**, **Stable Diffusion Models** & **Large Language Models (LLAMA)**. Compressed all these models for deploying in mobile devices.
- Involved in research work on **Neural Style Transfer (NST)**.
- Implemented a DL model for **LaTeX - OCR** task. The model's aim is to detect & recognize the mathematical equations present in a research paper. Compressed the model for the integration with edge devices.

## **Teaching Experience**

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### **Department of Computer Science , IIT Hyderabad**

**Teaching Assistant**

**Nov 2021 - Apr 2024**

- Served as a **Teaching Assistant** for multiple courses, including:

1. **Operating Systems** (CS3510) under **Dr. Sathya Peri**
2. **Discrete Mathematics** (CS1010) under **Dr. Rakesh Vekat**
3. **Database Management Systems** (CS3550) under **Dr. Manish Singh**
4. **Theory of Computation** (CS2030) under **Dr. Subrahmanyam Kalyanasundaram**

## **Research Community Service**

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### **Research Reviewer**

**2025 – Present**

- Reviewer: **ICML**, **NeurIPS**, **ACL**, **AAAI** & **ICASSP** workshops & main tracks.
- Area Chair: **ICASSP'26**

## Projects

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### Continual Learning for 3D Point Cloud

*Guide: Dr. P K Srijith*

- Implemented Continual Learning on **Pointnet** architecture by addressing the challenge of catastrophic forgetting.
- Implemented **Knowledge Distillation** approach for the Continual Learning & Model was trained on **ModelNet10** dataset.

### Computer Vision & NLP | Personal Projects

- Image denoising using **Auto - Encoders**. Model trained on **MNIST** dataset.
- Human Face generation using **GANs**. Model trained on **celeba** dataset.
- Underwater Object Detection and Classification using **DGYOLO**. Model trained on **URPC 2019** dataset.

## Technical Skills

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**Languages:** C, C++, Python, SQL, HTML, CSS

**Frameworks & Tools :** PyTorch, Tensorflow, ONNX, Hugging Face, Docker, Git, LaTeX, Markdown

**Operating Systems :** Linux, Windows

**Familiar:** Tensorrt, JavaScript

## Achievements

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- Secured AIR **1156** in Open Category & AIR **91** in EWS Category in IIT JEE Advanced 2020.
- Secured AIR **493** in Open Category & AIR **45** in EWS Category in JEE Main B Planning 2020.
- Secured **99.75** percentile in IIT JEE Main 2020.
- AP EAMCET 2020 Rank **135**.
- TS EAMCET 2020 Rank **307**.
- Solved around 700+ CP problems over multiple platforms [LeetCode](#) , [CodeChef](#) , [CodeForces](#) , [GeeksForGeeks](#).

## Leadership / Extracurricular

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- Worked as a Core member for **Epoch : AI-ML club of IITH**.
- Worked as an **Internship & Placement** Coordinator for Office of Carrer Service of IITH.
- Member of IITH **Chess** team , Represented IITH at **InterIIT** & various competitions.