

RUSHENDRA SIDIBOMMA

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Education

Indian Institute of Information Technology, Sri City

Dec 2020 – July 2024

Bachelor of Technology in Computer Science (*Honours*) - GPA : 9.57/10

Sri City, India

Experience

AutomationEdge Technologies

Jan 2024 – Present

Machine Learning Research Engineer

Pune, India

- Developed a **GenAI document analysis tool** for extracting critical details from medical documents and supporting decision-making in home health agencies. Led to a **30% increase in patient intake** with **60% reduction in costs**.
- Successfully deployed for **10+ leading agencies** across the **United States** handling **100+ document formats**.
- Generated a revenue of \$200,000 for document extraction and processing services and led the client communication.
- Built a fully automated solution for performing **ICD-10 coding** of medical documents for a leading healthcare agency, handling over **70,000 ICD codes**. Optimized billing workflows by helping coders **reduce manual efforts by 30%**.

Trustworthy AI Lab, Toronto Metropolitan University

May 2023 – Present

Research Intern, Supervised by **Dr. Reza Samavi** (Associate Prof.)

Toronto, Canada

- Proposed a novel approach for verifying the robust accuracy of a model, achieving a **50% reduction** in time complexity compared to benchmark methods. Introduced a metric to **standardize** the comparison of model robustness.
- Formulated a novel semi-definite relaxation of the **ReLU** function constraints, reducing the time complexity of the robustness certification problem by **47%** with an error margin of **less than 2%**.

Eyemote Vision Inc.

Aug 2023 – Jan 2024

AI Engineer Intern

Remote

- Built a robust ensemble of **deep learning models** involving CNNs, vision transformers, and segmentation models to detect and grade the **severity of diabetic retinopathy**. Developed as an **MVP** achieving **87%** accuracy on real data.
- Implemented **RMS Pooling** and **Krizhevsky color augmentation** to address the highly **imbalanced dataset**.

Publications

- Sidibomma, R.**, Patwa, P., Patwa, P., Chadha, A., Jain, V. and Das, A., 2025, January. LLMsAgainstHate@ NLU of Devanagari Script Languages 2025: **Hate Speech Detection and Target Identification in Devanagari Languages via Parameter Efficient Fine-tuning of LLMs**. In Proceedings of the First Workshop on Challenges in Processing South Asian Languages (CHiPSAL 2025) (pp. 301-307). ([Link](#))
- R. Sidibomma** and R. K. Sanodiya, “**Learning Semantic Representations and Discriminative Features in Unsupervised Domain Adaptation**,” 2023 11th International Symposium on Electronic Systems Devices and Computing (ESDC), Sri City, India, 2023, pp. 1-6, doi: 10.1109/ESDC56251.2023.10149872. ([Link](#))

Projects

Knowledge Management Service | *Django, Retrieval Augmented Generation (RAG), Microsoft Azure*

March 2024

- Developed a **multi-tenant RAG chatbot** using **on-prem LLMs** to address queries about company and HR policy.
- Redesigned** the indexing schema, leading to a **30%** improvement in chunk retrieval quality.
- Implemented query expansion techniques to ensure **high alignment** of LLM responses with the user’s knowledge base.

Intelligent Email Ticketing and Service Automation System | *LLMs, Model Distillation*,

September 2023

- Distilled GPT-4o’s reasoning into a lightweight **T5-base model** (220M params) for classifying **20+** IT service request categories. Achieved an **on-premise** solution with **low-latency CPU inference**, matching GPT’s **93% accuracy**.
- Integrated the model into a **Django service** that uses **Named Entity Recognition (NER)** to extract user-specific details and trigger appropriate **IT workflows**.

Technical Skills

Programming Languages: Python, C/C++, JavaScript, SQL, MATLAB, LaTeX

Tools & Technologies: Linux, AWS, Azure, Git, Docker, Bash, On-prem LLM Hosting

Frameworks & Libraries: PyTorch, Django, NumPy, Pandas, OpenCV, Matplotlib

Honors & Awards

- Awarded **\$9,000 fellowship** for a **12-week on-site** research assistantship in **Canada**
- Ranked **2nd** out of **212 students** in the Computer Science Department (by GPA)