SAKSHI

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EDUCATION

University of Maryland, College Park, MD, USA Aug 2024 – Present
Degree: Ph.D. in Computer Science (Advised by - Dr. Dinesh Manocha and Dr. Ramani Duraiswami) *GPA : **3.92 / 4.00***

University of Massachusetts Amherst, MA Sep 2022 – May 2024
Degree: Master of Science in Computer Science *GPA : **3.71 / 4.00***
Coursework: Graph Modelling, Machine Learning, Natural Language Processing, Information Retrieval, Algorithms for Data Science

Siddaganga Institute of Technology, Tumkur, India Aug 2016 – Jun 2020
Degree: B.Tech in Computer Science and Engineering *GPA : **9.05 / 10.00***
Coursework: Data Structures & Algorithms, Computer Network, Digital System Design

Selected Papers and Patents (in chronological order)

- MMAU: A Massive Multi-Task Audio Understanding and Reasoning Benchmark **ICLR 2025 (Spotlight)**
  S Sakshi, Utkarsh Tyagi, Sonal Kumar, Ashish Seth, S. Ramaneswaran, Oriol Nieto, Ramani Duraiswami, Sreyan Ghosh, Dinesh Manocha
- GAMA: A Large Audio-Language Model with Advanced Audio Understanding and Complex Reasoning Abilities **EMNLP 2024 (Oral)** **Media Coverage 1 Media Coverage 2**
  Sreyan Ghosh, Sonal Kumar, Ashish Seth, Chandra Kiran Reddy Evuru, Utkarsh Tyagi, **S Sakshi**, Oriol Nieto, Ramani Duraiswami, Dinesh Manocha
- EH-MAM: Easy-to-Hard Masked Acoustic Modeling for Self-Supervised Speech Representation Learning **EMNLP 2024 (Oral)**
  Ashish Seth, Ramaneswaran Selvakumar, **S Sakshi**, Sonal Kumar, Sreyan Ghosh, Dinesh Manocha
- Do Vision-Language Models Understand Compound Nouns? **NAACL 2024**
  Sonal Kumar, Sreyan Ghosh, **S Sakshi**, Utkarsh Tyagi, Dinesh Manocha
- CompA: Addressing the Gap in Compositional Reasoning in Audio-Language Models **ICLR 2024**
  Sreyan Ghosh, Ashish Seth, Sonal Kumar, Utkarsh Tyagi, Chandra Kiran Evuru, S. Ramaneswaran, **S Sakshi**, Oriol Nieto, Ramani Duraiswami, Dinesh Manocha
- DALE: Generative Data Augmentation for Low-Resource Legal NLP **EMNLP 2023**
  Sreyan Ghosh, C. K. Evuru, Sonal Kumar, **S Sakshi**, Utkarsh Tyagi, Dinesh Manocha
- MELD: A Multilingual Multi-Party Dataset for Emotion Recognition in Conversations **NAACL 2024**
  Sreyan Ghosh, S Ramaneswaran, Utkarsh Tyagi, Harshvardhan Srivastava, Samden Lepcha , **S Sakshi** , Dinesh Manocha
- DeToxy: A Large-Scale Multimodal Dataset for Toxicity Classification in Spoken Utterances **INTERSPEECH 2022**
  Sreyan Ghosh, Samden Lepcha, **S Sakshi**, Rajiv Ratn Shah, S. Umesh
- Multivariate Time-series Unsupervised Anomaly Detection in 5G Networks **US Patent with Cisco Systems**
  Sreyan Ghosh, **S Sakshi**
- **Full list of Publications**

TECHNICAL SKILLS

Programming / Scripting Languages: Python, Java, C/C++, SQL, HTML, CSS, Angular, RESTful API
Frameworks: PySpark, Hadoop, PyTorch, Keras, Tensorflow, Spark, Flask, Django, Keras, Numpy, Pandas
Tools / Platforms: Apache Airflow, Dataswarm, Git, Microsoft Azure, Databricks, Apache Oozie, Linux, Tableau, Docker, AWS EC2, JIRA

WORK EXPERIENCE

University of Maryland, College Park, MD, USA Aug 2024 - Present
Teaching Assistant
- TA for Graduate Natural Language Processing (CMSC 723) for Fall 2024 under Prof. Jordan Boyd-Graber and Prof. Naomi Feldman.

LightBeam.ai, San Jose, USA May 2024 - Aug 2024
Machine Learning Intern
- Contributed to the development of Spectra, an advanced data protection engine. My role involved leveraging AI and machine learning to link fragmented data and create detailed identity graphs for customers, employees, and others. This helped in assessing risks and **preventing data leaks**.
- Utilized **generative AI** technologies to enhance data cataloging, control, and compliance processes, ensuring robust data security and privacy measures.

UMass Center for Data Science, Amherst, USA May 2023 - Aug 2023

NLP Research Intern

- Worked on the International Hate Observatory Project focused on the **detection of hate speech** in YouTube videos by implementing Natural Language Processing (**NLP**) and **audio processing** techniques in **PyTorch**.
- Collaborating with a multidisciplinary team to design and optimize scalable solutions for processing **multimodal data** and applying state-of-the-art techniques to identify and classify instances of hate speech.

Cisco Systems, Bangalore, India Aug 2020 - Jul 2022

Software Engineer II

- Developed and implemented an AI-based network security system for a telecom customer, leveraging advanced AI techniques to detect and **flag network anomalies** while contributing to Cisco's AI R&D division, patented under US Patents.
- Implemented MPLS backbone services for Bharti Airtel and leveraging Cisco's **Network Service Orchestration** (NSO) tool, the performance of their data transmission across the globe was improved by ~10%.
- Worked on automating Cisco's Data Center Network Manager(**DCNM**) APIs modules using **Ansible** and **Python,** increasing the operational efficiency of DCNM by 30%.

Cisco Systems, Bangalore, India Jan 2020 - Jun 2020

Software Engineering Intern

- Devised an end-to-end framework to gather network configurations using **MEAN STACK**, directly integrating them into the network service orchestration pipeline, resulting in a 30% increase in operational efficiency.

PROJECTS

Data Augmentation for Low Resource Legal NER | GitHub

- Used PyTorch and **HuggingFace** libraries for generating augmentations with **BART** on low-resource legal data for better neural network learning of NER and passing the augmentation to **fine-tune legalBERT**.
- Used a novel **keyword extraction algorithm** to pre-train BART that improves performance by 17% over baseline.

Road Symbols Detection | *Smart India Hackathon Project, aided by Govt. of India*

- Built an End-to-End system using **Convolutional neural networks** and IoT to classify extracted frames in a real-time app for tracking road symbols from a moving vehicle to display all the required information related to it to help the drivers follow traffic rules and reduce the possibility of accidents.

ACHIEVEMENTS AND EXTRACURRICULAR ACTIVITIES

- Recognized by Cisco CX CTO and higher management on multiple occasions for my research and innovation initiatives, 2020.
- KPIT Innovation Award in a national-level hackathon, SMART INDIA HACKATHON 2018.
- Received token of appreciation for volunteering in organizing numerous vocational teaching activities for helping underprivileged children, Lok Kala Parishad, in the year 2017.
- Winner in Choreography in Intercollege dance competition, Siddaganga Institute of Technology, 2017.