

Sreyan Ghosh

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• LinkedIn

• GitHub

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• Portfolio

EDUCATION

Bachelor of Technology in Computer Science, Christ University, GPA: 8.69/10.00

April 2016 — April 2020

EXPERIENCE

Software Engineer II

Cisco Systems

August 2020 — Present

Bangalore, India

- Working as a senior software engineer in the automation and orchestration team under the Customer Experience BU. Building network assurance solutions for Cisco's telecom customers, leveraging state-of-the-art algorithms for anomaly detection at scale. Built a critical component in Cisco's first telemetry-based network assurance solution.
- Currently leading the development of an AI-based network security system for one of Cisco's telecom customers.
- Contributing to AI R&D at Cisco by representing Cisco at various conferences.

Project Associate (Research) [Link]

Speech Lab, Department of Electrical Engineering, Indian Institute of Technology Madras

June 2021 — Present

Chennai, India

- Working under **Dr. Umesh S.** in the area of self-supervised learning in Speech and Audio. Exploring techniques to devise lighter-weight models and efficient algorithms to make self-supervised learning amenable to resource-constrained scenarios (both data and compute). Paper accepted at **AAAI 2022**. Paper currently under review at **ICASSP 2022**.

Research Assistant (part-time) [Link]

MIDAS Labs, IIIT-Delhi

December 2019 — Present

Delhi, India

- Working under **Dr. Rajiv Ratn Shah** in the areas of Speech and Natural Language Processing. Worked on multilingual low-resource ASR systems for Indian Languages which served as a critical component for other systems built by the lab. Worked in the field of content moderation in both speech and text. Currently exploring multi-modal techniques for identifying disfluencies in spoken utterances. Published papers at **AAAI 2021** and **ACL 2021**. Paper currently under review at **ICASSP 2022** and **NAACL 2022**.

INTERNSHIPS

Research Intern

MIDAS Labs, IIIT-Delhi

January 2020 — June 2020

Delhi, India

- Worked on a project, End-to-End Named Entity Recognition from English Speech under the guidance of **Dr. Rajiv Ratn Shah** as part of my bachelors thesis. Paper accepted at **Interspeech 2020**.

Technology Intern

Cisco Systems

January 2020 — June 2020

Bangalore, India

- Worked on building a VOIP (Voice Over IP) Traffic Analyzer to detect anomalous SIP messages using machine learning.

Data Science Intern

Noodle.ai

December 2019 — January 2020

Bangalore, India

- Worked on multivariate time-series anomaly detection in high-frequency IoT sensor data obtained from steel manufacturing machines.

Data Science Intern

TEG Analytics

April 2019 — May 2019

Bangalore, India

- Worked under the healthcare intelligence division to provide insights from insurance plan enrollment data, for private insurance companies in the US.
- Used Machine Learning and Deep Learning techniques to predict plan enrollment for insurance companies.

PROJECTS

Intelligent Minutes of the Meeting

July 2020 — August 2020

- Used Automatic Speech Recognition and Speech Diarization together with transformer-based text summarization and Named-Entity-Recognition to create a web app for intelligent Minutes of the Meetings.
- Application has capabilities to take meeting recordings and output summary, diarized transcripts, and key points from the meeting including dated items and to-dos.

SpeeQL

June 2020 — July 2020

- Used Automatic Speech Recognition, NER, and Image Classification together with OCR to build a smart in-store touch-free shopping assistant for brick and mortar stores.
- Project was one of the first to use speech as a medium of interaction. Was later adopted by P&G to deploy on scale.

User fatigue prediction using deep learning

July 2019 — August 2019

- Building End-to-End systems using object detection and image classification techniques to detect levels of fatigue in different parts of the face.
- Build a novel dataset for the same. The application was able to give a user suggestions based on his total level of fatigue calculated using weighted average of fatigue from all parts of the face.

SKILLS

Programming Python, Java, C, MySQL, HTML, CSS

Frameworks PyTorch, Keras, Tensorflow, Django, Flask, Spark

Tools GIT, Android, Tableau, Power BI, AWS, GCP, Rest API, Docker, K8s

Concepts Speech and Natural Language Processing, Software Development, Functional programming, Object-oriented programming, Machine Learning, Deep Learning, Image Processing, Cloud Computing

PUBLICATIONS (ACCEPTED & PENDING) AND PATENTS

- Ghosh, S.**, Seth, A., Mittal, D. & Umesh, S. DeLoRes: Decorrelating Latent Spaces for Low-Resource Audio Representation Learning. *AAAI-2022* (2022).
- Ghosh, S.** & Kumar, S. Cisco at SemEval-2021 Task 5: What's Toxic?: Leveraging Transformers for Multiple Toxic Span Extraction from Online Comments. **Link.** *SemEval-2021 at ACL 2021* (2021).
- Ghosh, S.** et al. Cisco at AAI-CAD21 shared task: Predicting Emphasis in Presentation Slides using Contextualized Embeddings. **Link.** *CAD-21 at AAI-2021* (2021).
- Ghosh, S.**, Lepcha, S., Sakshi, S. & Shah, R. R. Speech Toxicity Analysis: A New Spoken Language Processing Task. **Link.** *Submitted to ICASSP 2022* (2022).
- Ghosh, S.**, Katta, S. V., Seth, A. & Umesh, S. Deep Clustering For General-Purpose Audio Representations. **Link.** *Sub. to ICASSP 2022*.
- Yadav, H., **Ghosh, S.**, Yu, Y. & Shah, R. R. End-to-end Named Entity Recognition from English Speech. **Link.** *Interspeech* (2020).
- Ghosh, S.**, Sakshi & Kataria, V. Multivariate Time-series Unsupervised Anomaly Detection in 5G networks. Defensive Publication. *Under US Patenting with Cisco* (2020).

AWARDS & HONORS

- 2020** Awarded the **Graham Bell Award** for being one of the most competitive undergraduates to have passed out in the year 2020
- 2020** Winner of Cisco Collab Hacks
- 2020** Winner of P&G Global Innovation Challenge
- 2019** Appeared on the cover page of Analytics India Magazine twice for winning national level hackathons (**TEG Analytics and Uber Hackathon**)
- 2019** Winner of Hindustan Unilever BFS Technology Hackathon
- 2018-20** Winner of various inter-college and intra-college hackathons sponsored by MNCs and the Government

RESPONSIBILITIES

2019-20 Served as the Secretary of Computer Science Department, Christ University

2018-20 Co-founded Neuron, Christ University's first AI club focused on research, served as the first Vice President of the club

COMMUNITY SERVICE

Present Reviewer at Electronic Letters (IET)

2021 Reviewer at ACL 2021

2021 Reviewer at HASOC 2021

CO-CURRICULAR AND HOBBIES

2015 State-Level Table Tennis Champion (West Bengal, India)

Present Active investor and trader in the stock markets. In-depth knowledge of fundamental and technical analysis of stocks.

Present Nature Photography