

# 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)

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 currently under review at **ICASSP 2022**.

### Research Collaborator

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 an 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. Application was able to give user suggestions based on his total level of fatigue calculated using weighted-average of fatigue from all parts of the face.

## SKILLS

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<b>Programming</b>	Python, Java, C, MySQL, HTML, CSS
<b>Frameworks</b>	PyTorch, Keras, Tensorflow, Django, Flask, Spark
<b>Tools</b>	GIT, Android, Tableau, Power BI, AWS, GCP, Rest API, Docker, K8s
<b>Concepts</b>	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

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1. **Ghosh, S.** & Kumar, S. Cisco at SemEval-2021 Task 5: What's Toxic?: Leveraging Transformers for Multiple Toxic Span Extraction from Online Comments. *SemEval-2021 at ACL* (2021).
2. **Ghosh, S. et al.** Cisco at AAIL-CAD21 shared task: Predicting Emphasis in Presentation Slides using Contextualized Embeddings. *CAD-21 at AAIL* (2021).
3. **Ghosh, S. et al.** Speech Toxicity Analysis: A New Spoken Language Processing Task. *Submitted to ICASSP* (2022).
4. **Ghosh, S. et al.** Deep Clustering For General-Purpose Audio Representations. *Submitted to ICASSP* (2022).
5. Yadav, H., **Ghosh, S.** & Shah, R. R. End-to-end Named Entity Recognition from English Speech. *Interspeech* (2020).
6. **Ghosh, S.**, Sunny, S. J. & Roney, R. Accident Detection Using Convolutional Neural Networks. *IconDSC* (2019).
7. **Ghosh, S.**, Sakshi & Kataria, V. Multivariate Time-series Unsupervised Anomaly Detection in 5G networks. *Under US Patenting with Cisco* (2020).

## AWARDS & HONORS

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2020	Awarded the <b>Graham Bell Award</b> 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 ( <b>TEG Analytics and Uber Hackathon</b> )
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

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2019-20	Served as the Secretary of Computer Science Department, Christ University
2018-20	Co-founded Neuron, Christ Universities first AI club focused on research, served as the first Vice President of the club

## COMMUNITY SERVICE

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<b>Present</b>	Reviewer at Electronic Letters (IET)
2021	Reviewer at ACL 2021
2021	Reviewer at HASOC 2021

## CO-CURRICULAR AND HOBBIES

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2015	State-Level Table Tennis Champion (West Bengal, India)
<b>Present</b>	Active investor and trader in the stock markets. In-depth knowledge of fundamental and technical analysis of stocks.
<b>Present</b>	Nature Photography