Srinath Srinivasan

Linkedin: linkedin.com/in/srina1h

Email: ssrini27@ncsu.edu
Github: github.com/srina1h

EDUCATION

North Carolina State University — Raleigh, United States
Masters in Computer Science — Aug 2023 - Present

SSN College of Engineering, Anna University — Chennai, India
B.E. in Computer Science and Engineering; CGPA: 8.8/10 (First class with distinction) — Aug 2018 - May 2022

Chettinad Vidyashram — Chennai, India
Central Board of Secondary Education; Class 12: 94%, Class 10: 10/10 CGPA — Class 12: 2018, Class 10: 2016

EXPERIENCE

North Carolina State University — Raleigh, USA
Research Assistant — Aug 2022 - Present
- Investigating HPC acceleration of tensorized neural networks through custom CUDA kernels

Poshmark — Chennai, India
Software Engineer — Aug 2022 - Jul 2023
- Developed crucial components for Poshmark's live streaming and auction features
- Took engineering ownership of a feature to enable ML-based image placement guidance for product listings
- Migrated key components from legacy to the new MVVM paradigm to ensure testability and efficiency

Navis — Chennai, India
Associate Software Engineer - Intern — Jan 2022 - July 2022
- Was part of the team developing the Navis N4 terminal operating system
- Worked on an adjacent product to enable smart docking of ships to optimize dock space

Robert Bosch Centre for Data Science and Artificial Intelligence — Chennai, India
Research Intern — Apr 2022 - Aug 2022
- Used boosting methods to predict ambulance response times based on position data in Chennai city
- Performed feasibility analysis using graph neural networks correlating existing data with map information
- Project was in collaboration with 108 ambulance service (State Govt of Tamil Nadu)

Renault Nissan Technology and Business Centre — Chennai, India
SDE Intern — Aug 2021 - Oct 2021
- Took ownership of a project to automate data ingestion pipelines for the data analytics team
- Application reduces delay in creating analytical reports while ensuring minimal cost of maintenance

Robert Bosch Centre for Data Science and Artificial Intelligence — Chennai, India
Research Intern — Apr 2021 - Aug 2021
- Worked on predicting student dropouts from NPTEL (MOOC) courses focusing on explainability
- Insights gained were used by NPTEL to understand and combat various issues leading to student dropouts

Indian Institute of Technology Madras — Chennai, India
Research Intern — Jun 2020 - Oct 2021
- Applied machine learning to near-field acoustics problems using various complex-valued regression models
- Methods showed greater efficiency and matched the accuracy of traditional methods (L1CVX)

Advanced Manufacturing Technology Development Centre — Chennai, India
Web-Dev Intern — July 2020 - Sep 2020
- Development of technology eco-platform "kite" using Django and Python. Deployed on Apache web server. (Link)
- Part of technology platforms funded by DST, Govt. of India to connect industries with college students

PUBLICATIONS

- **Machine learning aided near-field acoustic holography based on equivalent source method (3rd author) (Link)** — Journal
  The Journal of the Acoustical Society of America — Feb 2023
  - Developed complex-valued models to localize and reconstruct acoustic sources in reverberent environments
  - Models were optimized using quasi-Newtonian methods - LBFGS
  - Results experimentally validated through microphone arrangements in an anechoic chamber

- **Data-Driven Neural Networks for Source Localization and Reconstruction Using a Planar Array (2nd author) (Link)** — Journal
  International Journal of Aeroacoustics — Nov 2022
  - Developed a pipeline of networks to categorize, localize and reconstruct acoustic sources
  - Networks consider absolute values of acoustic pressure, matching performance of traditional slower methods

- **Exploring Bayesian Uncertainty Modeling for Book Genre Classification (1st author)** [(Link)]

  Conference

  Sep 2022

  2022 IEEE International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology - Bali, Indonesia
  - Quantification of prediction uncertainty of a bidirectional LSTM designed for multi label book genre classification
  - Uncertainty estimated through Monte-Carlo dropouts and deep ensembling is used to filter high quality predictions
  - Results show 14% improvement of F1 score from baseline

- **Equivalent source method based near-field acoustic holography using machine learning (3rd author)** [(Link)]

  Conference

  Aug 2022

  51st International Congress and Exposition on Noise Control Engineering (Internoise 2022) - Glasgow, Scotland
  - Developed complex valued models to localize and reconstruct acoustic sources in non-reverberent environments

- **LRCNs for Stroke Detection in Table Tennis (2nd author)** [(Link)]

  Conference

  Oct 2019

  10th MediaEval Workshop (Multimedia Benchmark Challenge) - Sophia Antipolis, France
  - Table tennis stroke classification from gray scale videos of players enacting 20 table tennis strokes using LRCN
  - Only undergraduate team part of the challenge among doctoral researchers

PROJECTS

- **Bachelor's thesis - Enhancing Quality Of Predictions Using Uncertainty Estimation Techniques** [(Link)]: Estimated the uncertainty of a bidirectional-LSTM trained to solve a multi-label book genre classification problem. Used multiple methods such as Monte-Carlo dropouts, deep model ensembling and Bayesian neural networks to quantify uncertainty and use it to filter out predictions. Part of this research was published at IEEE IAICT 2022.

- **Automated Attendance Management System Using Facial Recognition** [(Link)]: A lightweight facial recognition based attendance management system. Website made using **React** and **Express.js**. Uses **TensorFlow.js** and **face-api.js** for facial recognition.

- **Nereus, A music bot for Discord** [(Link)]: An actively maintained **Discord.js** based music bot which uses YouTube API and YoutubeDL to serve music in over **650 servers**. The bot is also **Verified by Discord**. Free, **open source** and hosted on **AWS**.

- **Retinal OCT - Disease Classification** [(Link)]: Retinal disease identification using Optical Coherence Tomography images. Comparison of VGG-19 and lightweight MobileNet v2 based transfer learning models. Highlights potential of lightweight models in complex tasks.

TEST SCORES

- GRE: 332 - 170 Quant, 162 Verbal, 4.0 AWA
- TOEFL: 116 - 30 Reading, 27 Listening, 30 Speaking, 29 Writing

HONORS AND AWARDS

- 1st place, Shaastra AI Games Challenge hosted by IIT Madras - 2021 [(Link)]
- Top 5%, NPTEL Course - Deep Learning - 2021 [(Link)]
- National Rank 1, NPTEL Course - Introduction to internet of things - 2021 [(Link)]