

Srinath Srinivasan

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EDUCATION

- **North Carolina State University** Raleigh, NC
• *Master's in Computer Science; GPA: 4.0/4.0* Aug 2023 - Present
Courses: Neural Networks, Compiler Construction, Computer Networks, Software Engineering, Efficient Deep Learning, Design & Analysis Of Algorithms, Deep Learning Beyond Accuracy, Efficient Tensor Processing for AI
- **Anna University** Chennai, India
• *Bachelor of Engineering in Computer Science; GPA: 8.8/10 (3.82/4.0)* Aug 2018 - May 2022
Courses: Operating Systems, Data Structures, Analysis Of Algorithms, Artificial Intelligence, Databases, Theory of Computation, Discrete Mathematics, Probability and Statistics, Distributed Systems, Computer Architecture, Cloud Computing, Programming in C

RESEARCH EXPERIENCE

- **North Carolina State University** Raleigh, USA
• *Graduate Research Assistant (Advisor: [Dr. Jiajia Li](#))* Aug 2023 - Present
 - Realized 10% improvement per iteration in compressed LLM inference by identifying bottlenecks in PyTorch components
 - Introduced novel tensor contraction techniques into an existing tensorized transformer model connecting PyTorch to high performance CUDA/C++ libraries. Studied implications/overhead of multi-language library use.
 - Created pipelines to benchmark intermediate layer operations from PyTorch such as Transformer, Dense on NVIDIA GPUs
- **Robert Bosch Centre for Data Science and Artificial Intelligence** Chennai, India
• *Research Intern* Apr 2022 - Aug 2022
 - Used gradient boosting and graph neural networks to predict ambulance response times based on position in Chennai city
 - Project done in collaboration with 108 ambulance service of Chennai (State Govt of Tamil Nadu)
- **Indian Institute of Technology Madras** Chennai, India
• *Resesarch Intern* Jun 2020 - Oct 2021
 - Trained complex-valued regression models for loudspeaker source localization performing 5 times faster than conventional numerical methods while preserving accuracy. Co-authored a [publication](#) in the Journal of the Acoustical Society of America.
 - Co-authored a [paper](#) to recognize, localize and reconstruct pressure signals to model it on an adjacent surface
- **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

PUBLICATIONS ([GOOGLE SCHOLAR](#))

- Extracting Usable Predictions from Quantized Networks through Uncertainty Quantification for OOD Detection ([Link](#))
Rishi Singhal, **Srinath Srinivasan**
ArXiv Preprint (2024)
- Machine learning aided near-field acoustic holography based on equivalent source method ([Link](#))
S. K. Chaitanya, Siddharth Sriraman, **Srinath Srinivasan**, K. Srinivasan
The Journal of the Acoustical Society of America (2023)
- Data-Driven Neural Networks for Source Localization and Reconstruction Using a Planar Array ([Link](#))
Sai Manikanta Kaja, **Srinath Srinivasan**, K. Srinivasan
International Journal of Aeroacoustics (2022)
- Exploring Bayesian Uncertainty Modeling for Book Genre Classification ([Link](#))
Srinath Srinivasan, SG Shivanirudh, Sujay Sathya, TT Mirnalinee
IEEE International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology (2022)
- Equivalent source method based near-field acoustic holography using machine learning ([Link](#))
S.K Chaitanya, Siddharth Sriraman, **Srinath Srinivasan**, K Srinivasan
The 51st International Congress and Exposition on Noise Control Engineering (Internoise 2022)
- LRCNs for Stroke Detection in Table Tennis ([Link](#))
Siddharth Sriraman, **Srinath Srinivasan**, Vishnu K Krishnan, J Bhuvana, TT Mirnalinee
MediaEval Workshop (2019)

TEACHING & SERVICE

- **Teaching Assistant** for CSC591: Parallel Algorithms - Fall 2024 at North Carolina State University
 - Sole TA for Parallel Algorithms, a research oriented course by Dr. Jiajia Li. Course objectives were to review several publications in the HPC domain on EasyChair (a conference portal) and a course project
 - Prepared key points from student's reviews for in-class discussion validating them against OpenReview comments
 - Graded assignments and organized a project Symposium to showcase student's project posters

WORK EXPERIENCE

- **Data Aces** Sugar Land, TX, USA
 - *ML Engineering Intern* *Jun 2024 - Aug 2024*
 - Developed a Gen AI aided solution to explain flagging of fraudulent transactions to banking customers
 - Designed a RAG pipeline to feed the LLM learned knowledge from XGBoost model along with an individual user's recent transaction data - compounding information from both vector and relational databases. Improved explainability of fraud.
- **Poshmark** Chennai, India
 - *Software Engineer - 1* *Aug 2022 - Jul 2023*
 - Developed key infrastructure for the [Poshmark iOS app](#) such as screen pagination algorithms from scratch in the SwiftUI Combine based publisher-subscriber design paradigm
 - Migrated multiple legacy objective C components to the SwiftUI MVVM design pattern, resulting in a 60% reduction in code complexity and 10% improvement in screen load times. Oversaw slow-roll out of new components through A/B testing
- **Kaleris (formerly Navis)** Chennai, India
 - *Associate Software Engineer - Intern* *Jan 2022 - July 2022*
 - Resolved mission critical bugs in the Navis [N4 Terminal Operating System](#), increasing system stability and code coverage
 - Worked on an adjacent AI-aided solution to enable smart docking of ships saving ~15 minutes of manual calculation
- **Renault Nissan** Chennai, India
 - *Software Development Intern* *Aug 2021 - Oct 2021*
 - Designed and developed a scalable cloud-based pipeline to enable car dealerships to remotely communicate key data points to analysts. Pushed the MVP into production with minimal errors
 - Application reduces delay in creating analytical reports & minimizes manual entry errors through multiple validation checks bringing down weekly engineering efforts of data transfer and validation from ~3 hours to a few minutes

PROJECTS

- **Efficient Monte Carlo dropout for uncertainty estimation** - Designed a model splitting technique speeding up model uncertainty estimation by upto 33x. Devised technique can be applied to pre-existing models as well. ([Link](#)). Project guided by [Prof. Dongkuan Xu](#) at NC State
- **Synthetic cough generation using diffusion models** - Used a diffusion model to generate synthetic data for the small COUGHVID dataset for better Covid-19 cough detection. Improved efficiency using latent diffusion to achieve similar performance with lower training time. ([Link](#))
- **LLVM tool for C code optimization** (*in progress*) - Creating a 2 part tool to parse LLVM IR and based on variable reuse, identify the most influential variables on runtime performance and judge libraries adding most overhead
- **Retinal OCT - Disease Classification** - 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. ([Link](#))

TEST SCORES

- **GRE:** 332 - 170 Quant, 162 Verbal, 4.0 AWA ([Link to Score Report](#))
- **TOEFL:** 116 - 30 Reading, 27 Listening, 30 Speaking, 29 Writing ([Link to Score Report](#))

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](#))

SKILLS

- **Programming Languages:** Python, C/C++, Swift Java, JavaScript, SQL, HTML, Linux Scripting
- **Tools/Technologies:** Git, PyTorch, TensorFlow, CUDA NumPy, Pandas, CuPy

EXTRACURRICULARS

- Karate Black belt level - 1 at Hayashi Ha Karate Do (Japanese Karate organization)
- Trained Carnatic (Indian classical) music vocalist - Performed at many community events