

Sai Anuroop Kesanapalli

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EDUCATION

M.S., University of Southern California

Major: Computer Science

August 2022 - May 2024 (Exp.)

CGPA: 3.75/4

B. Tech., Indian Institute of Technology Dharwad

Major: Computer Science and Engineering

July 2017 - June 2021

CPI: 8.86/10

INTERESTS

MLOps, Edge-GPU Performance Characterization, Statistical Machine Learning, Deep Learning Theory, and Federated Learning

PUBLICATIONS

1. Prashanthi S. K, **Sai Anuroop Kesanapalli**, and Yogesh Simmhan. "Characterizing the Performance of Accelerated Jetson Edge Devices for Training Deep Learning Models". In: *Proc. ACM Meas. Anal. Comput. Syst.* 6, 3, Article 44 (December 2022). 2022. doi: [10.1145/3570604](#).
2. Prashanthi S. K, Aakash Khochare, **Sai Anuroop Kesanapalli**, Rahul Bhope, and Yogesh Simmhan. "Don't Miss the Train: A Case for Systems Research into Training on the Edge". In: *2022 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*. 2022, pp. 985–986. doi: [10.1109/IPDPSW55747.2022.00157](#).
3. Prashanthi S. K, **Sai Anuroop Kesanapalli**, Aakash Khochare, and Yogesh Simmhan. "Characterizing the Performance of Deep Learning Workloads on Accelerated Edge Computing Devices". In: *28th IEEE International Conference on High Performance Computing, Data & Analytics Student Research Symposium (HiPC SRS)*. 2021, [Poster].
4. **Sai Anuroop Kesanapalli** and B. N. Bharath. "Federated Algorithm with Bayesian Approach: Omni-Fedge". In: *ICASSP 2021 - 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. 2021, pp. 3075–3079. doi: [10.1109/ICASSP39728.2021.9413571](#).

EXPERIENCE

COURSE PRODUCER (Part-time)

Advisor: Prof. Vatsal Sharan

University of Southern California, Los Angeles

August 2023 - Present

Course Producer for CSCI 699: Theory of Machine Learning, offered in Fall 2023. I assist in grading the homeworks, and help with scribing lectures into $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$.

MACHINE LEARNING SOFTWARE INTERN (Full-time)

Summer Internship

DeGirum Corp., Santa Clara

May 2023 - August 2023

Developed an ONNX OCR pipeline with pre and post-processor modules compatible with edge-hardware [[OCR Deep Dive](#)]. Worked on a NumPy-only implementation of vision-based PyTorch operators such as Conv2D, MaxPool, among others, and published as a PyPI package [[beaverpy](#)].

RESEARCH ASSISTANT (Part-time)

Advisor: Prof. Vatsal Sharan

University of Southern California, Los Angeles

March 2023 - August 2023

Contributed to an open source project [[Tensor Toolbox](#)] on tensor decomposition methods, and worked on a faster C++ implementation of a random forest based anomaly-detection algorithm [[PIDForest](#)].

PROJECT ASSOCIATE - I (Full-time)

Advisor: Prof. Yogesh Simmhan

Indian Institute of Science, Bangalore

August 2021 - July 2022

Worked on performance characterization of Nvidia Jetson edge-accelerators on deep learning workloads, and also on a Federated Learning project involving dataset condensation as a subroutine [[1](#), [2](#), [3](#)].

Worked on Federated Algorithms with Bayesian [4] [Code | Slides] and Exponential Weighted Average [Report | Code] approaches.

PROJECTS

Forward-Forward: Is it time to bid adieu to BackProp?	[Slides Code]
Presentation on the Implicit Bias of SGD	[Slides]
Notes on Rethinking Classic Learning Theory in Deep Neural Networks	[Notes]
Store Sales - Time Series Forecasting	[Report Code]
Heterogeneity-Aware Hashing	[Slides Report Code]
Credit Card Fraud Detection	[Poster Report Code]
Implementation of Immediate Files in Minix OS	[Report Code]
Buffer Manager for PF Layer of ToyDB	[Report Code]
Processor Simulator for ToyRISC	[Code]
TCP Congestion Control	[Report Code]

SKILLS

Languages	Python, C++, Bash, HTML
Libraries	PyTorch, NumPy, Matplotlib, CSS
Tools	Git, L ^A T _E X
OS	Linux, Linux4Tegra, macOS

ACHIEVEMENTS & AWARDS

- 2023 Selected for the award of the prestigious **J N Tata Endowment Scholarship** for the higher education of Indians, for the year 2023-24.
- 2023 Awarded **NSF Travel Grant** for attending SIGMETRICS, co-located with ACM FCRC 2023, Orlando, FL.
- 2017 IIT JEE (Advanced) **All India Rank 8682** among ~160,000 candidates.
- 2016 **Telangana State Rank 1** among ~700,000 candidates in first year and under top ten ranks in second year TSBIE Intermediate Public Examination.
- 2014 Received **Certificate of Merit** from CBSE Delhi, for outstanding performance and for obtaining Grade **A1** in all the five subjects in Secondary School Examination.
- 2014 Recipient of Meritorious Student, School Topper and Star of Stars awards at St. Michael's School, Secunderabad.

STUDENT-OFFICES HELD

Mentor , Viterbi Graduate Mentorship Program, USC	2023 - Present
Student Coordinator , Institute Innovation Council, IIT Dharwad	2019 - 2021
Student Mentor , Institute Student Mentorship Programme, IIT Dharwad	2019 - 2020
Outreach Team Lead , Parsec: A Paradigm Shift, IIT Dharwad's Annual Tech Fest	2020
Event Coordinator , Development of Industry-Academia Link (DIAL), IIT Dharwad	2018

NATURAL LANGUAGES

Telugu, English, Hindi, Kannada

