

SAI ANUROOP KESANAPALLI

In pursuit of excellence in all my endeavours

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EXPERIENCE

Project Associate - I

Distributed Research on Emerging Applications and Machines Lab (DREAM:Lab), CDS

Indian Institute of Science, Bangalore

📅 August 2021 – July 2022

Member of the Edge-Analytics team. Conducted a suite of performance characterization experiments of deep learning workloads on Nvidia® Jetson Xavier™ AGX, NX and Nano edge-devices. Also worked on a project involving dataset condensation as a subroutine in federated learning setup.

Teaching Assistant

Indian Institute of Technology Dharwad

📅 August – October 2020

Teaching Assistant for corporate training courses offered by IIT Dharwad in the modules of Object-Oriented Programming, Concurrent Programming and Machine Learning.

RESEARCH INTERESTS

- Federated Learning | Edge-Computing | Knowledge Distillation | Distributed Systems | Distributed Optimization | Stochastic Optimization | Neural Networks | AI & ML
- Previously a member of Learning, Inference and Networks (LIaN) research group at IIT Dharwad

PUBLICATIONS

- Prashanthi S.K, Sai Anuroop Kesanapalli, Yogesh Simmhan, "Characterizing the Performance of Accelerated Jetson Edge Devices for Training Deep Learning Models", Accepted at the **ACM SIGMETRICS 2023**, <https://doi.org/10.1145/3570604>
- 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," Accepted at **4th Workshop on Parallel AI and Systems for the Edge (PAISE 2022)** at **36th International Parallel and Distributed Processing Symposium (IPDPS 2022)** <https://doi.org/10.1109/IPDPSW55747.2022.00157>
- Prashanthi S.K, Sai Anuroop Kesanapalli, Aakash Khochare and Yogesh Simmhan, "Characterizing the Performance of Deep Learning Workloads on Accelerated Edge Computing Devices," Accepted at **HiPC 2021 SRS - 28th IEEE International Conference on High Performance Computing, Data & Analytics Student Research Symposium**
- S. A. Kesanapalli and B. N. Bharath, "Federated Algorithm with Bayesian Approach: Omni-Fedge," **ICASSP 2021 - 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)**, 2021, pp. 3075-3079, doi: 10.1109/ICASSP39728.2021.9413571. <https://doi.org/10.1109/ICASSP39728.2021.9413571>

EDUCATION

Master of Science

Computer Science

University of Southern California, Los Angeles

📅 August 2022 - May 2024 (Expected)

Bachelor of Technology

Computer Science and Engineering

Indian Institute of Technology Dharwad

📅 2017 – 2021

CPI: 8.86/10



Awarded **AP** grade for exceptional performance twice. Scored **SPI: 10/10** in 7th semester.

Intermediate

TSBIE, MPC Stream

Sri Chaitanya Narayana Junior Kalasala, Hyderabad

📅 2014 – 2016

Score: 985/1000



Telangana **state 1st rank** in first year examination and among top ten ranks in second year examination

Secondary School Examination

CBSE

St. Michael's School, Secunderabad

📅 2014

CGPA:10/10



Received Secondary School Examination **Certificate of Merit** from CBSE Delhi, for outstanding performance and for obtaining **Grade A1** in all the five subjects

COMPETENCIES

- Python, C++, Java, C, Go, Bash, LaTeX
- Flower, PyTorch, Tensorflow, Keras
- NumPy, Pandas, Matplotlib, Seaborn
- STL, Flex, Bison
- PostgreSQL, MySQL
- HTML, CSS, PHP
- Matlab, Mathematica, Eclipse
- Linux, MacOS

STANDARDISED TESTS

- **GRE: 325** (161 V + 164 Q & 4.0 AWA)
- **TOEFL (iBT) MyBest Scores: 109** (29 R + 30 L + 23 S + 27 W)

PROJECTS (WHILE AT IIT DH)

- **Fed-Exp: Federated Algorithm With An Exponential Weighted Average Approach**
- **Credit Card Fraud Detection:** Devised an algorithm which utilises the concepts of bagging of feature vectors and assigns weights to SVM classifier
- **Heterogeneity-Aware Hashing:** Proposed hashing techniques which specifically address the heterogeneity of node capacities in light of consistent hashing properties and presented results of simulations.
- **Provided page buffering for the PF layer of ToyDB** using two page-replacement strategies (LRU and MRU) and compared their performance
- **Designed a contact directory website** using HTML, CSS, PHP and SQL
- **Implemented a game of Bulls and Cows (Mastermind)** in C++, utilising the concept of pruning to refine the set of possible codes
- **Implemented Immediate Files** in Minix OS
- **Implemented a 4x4 Sudoku Solver** using various search techniques and analysed performance
- **Implemented a Processor Simulator for ToyRISC ISA** in Java
- **Emulated congestion control algorithm of TCP** over UDP socket
- **Performed a study on Public Credit Registry - Request for Proposal document of RBI**, concerning some important aspects of software engineering

ACTIVITIES

- Participated in Google Hash Code 2020 wherein my team was ranked 909 worldwide and 80 in India
- Participated in SoftBank's Forex Predictor challenge as a part of Inter-IIT Tech Meet 2019
- Participated in DevHack 2019 organised at IIT Dharwad
- Delivered a student talk titled 'My Experiences at Radio Astronomy Winter School' in 2019 at IIT Dharwad
- Delivered a student talk titled 'My Summer Training Experiences at Yara' in 2018 at IIT Dharwad
- Host for the Foundation Day event of IIT Dharwad in 2018

HOBBIES

🏏 Learnt professional cricket under various coaches for a period of 6 years at HVM and St. John's coaching centres in Hyderabad and always keen to play the game during leisure

📖 An avid reader of books on geo-politics, history and natural sciences

🎹 Learning to play electronic keyboard

LANGUAGES

- **Telugu** (Native)
- **English** (Advanced)
- **Hindi** (Fluent)
- **Kannada** (Beginner)

OFFICES HELD (WHILE AT IIT DH)

Student Coordinator

Institute Innovation Council of IIT Dharwad

📅 2019 – 2021

Student Coordinator of IIC for a period of 2 academic years since the establishment of the council, which consisted of 20 students, 4 faculty members and 2 external members. Organised Avadhān: A Case Competition, Technostrophe Quiz and IIC Talk Series in this role among others.

Student Mentor

Institute Student Mentorship Programme

📅 2019 – 2020

Mentored a group of 6 mentees belonging to the freshman year

Outreach Team Lead

Parsec: A Paradigm Shift, IIT Dharwad's Annual Tech Fest

📅 2020

Event Coordinator

Development of Industry-Academia Link (DIAL)

📅 2018

Organised and hosted the first edition of DIAL at IIT Dharwad, leading a student team consisting of 10 students in coordination with 3 faculty members

AWARDS & ACCOLADES

Winner of Euonia Crossfire Debate competition at IIT Dharwad

📅 2020

📍 Dharwad

Winner of Incredible India Quiz held as a part of inter-branch Cultural Championship 2019-20 of IIT Dharwad

📅 2019

📍 Dharwad

Third Prize in the Essay Competition held on Ekta Diwas at IIT Dharwad

📅 2017

📍 Dharwad

Recipient of Meritorious Student, School Topper and Star of Stars awards presented by St. Michael's School, Secunderabad

📅 2014

📍 Secunderabad

Second runner-up in Face-Off, an Inter-School Debate competition held by St. Andrew's School, Secunderabad

📅 2013

📍 Secunderabad