

Sunny Sanyal

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Education

- 🎓 **PhD in Electrical and Computer Engineering** 2020–Present
The University of Texas at Austin Austin, TX
GPA: 3.81/4
Supervisor: Prof. Sujay Sanghavi
- 🎓 **M.Eng. by research in Communication and Information Systems** 2016–2019
Chongqing University of Posts and Telecom Chongqing, China
GPA: 92.22/100 (Excellent Thesis Award)
Supervisor: Prof. Dapeng Wu
- 🎓 **B.Tech. in Electronics and Communication Engineering** 2011–2015
Maulana Abul Kalam Azad University of Technology, India Kolkata, India
(Formerly known as West Bengal University of Technology)
GPA: 8.23/10 (Top 10% in class)

Research Interests

Large Language Models, Efficient Training, Efficient Inference, and Knowledge Distillation

Work Experience

1. **Amazon Science (Alexa AI)** Summer, 2022
Applied Scientist Intern Sunnyvale, CA
– Worked on vision language pretraining using knowledge distillation for transformers.
2. **Tech Mahindra** 2015–2016
Associate Software Engineer Hyderabad, India
– Worked within the offshore team to develop a website for ACRA government of Singapore.

Publications

1. **Understanding the Effectiveness of Early Weight Averaging for Training LLMs.** Preprint, 2023
Sunny Sanyal, Jean Kaddour, Abhishek Kumar, and Sujay Sanghavi.
2. **Early Weight Averaging Meets High Learning Rates for LLM Pre-training.** Under review, 2023
Sunny Sanyal, Atula Tejaswi, Jean Kaddour, Abhishek Kumar, and Sujay Sanghavi.
3. **DeepMines: A fog enabled prediction platform for underground coal mines.** IEEE COMSNETS Workshop, 2020
Sunny Sanyal, Animesh Chattopadhyay. (IEEE ComSoc Honorary Mention Award)
4. **Data Aggregation Techniques for Internet of Things.** Master's thesis, 2019
Sunny Sanyal. (Excellent Master's Thesis Award)
5. **A Federated Filtering Framework for Internet of Medical Things.** IEEE ICC, 2019
Sunny Sanyal, Dapeng Wu, and Boubakr Nour. (Oral)
6. **Improving Quality of Data: IoT data aggregation using device to device communications.** IEEE Access, 2018
Sunny Sanyal, and Punning Zhang.
7. **Co-relative mobility based IoT data uploading using D2D communication.** ACM/EAI Mobimedia, 2017
Sunny Sanyal, Wu Dapeng, Junjie Yan, and Xing Li.
8. **Trust oriented partner selection in D2D cooperative communications.** IEEE Access, 2017
Dapeng Wu, Junjie Yan, Sunny Sanyal, Ruyan Wang.
9. **Automatic switching of home appliances one sensor to many system approach.** IEEE PIICON, 2014
Sunny Sanyal, and Simpy Sanyal.

Work in Progress

1. **Leveraging the Intermediate layers of LLMs for Faster Inference.**
Sunny Sanyal, and Sujay Sanghavi.

Summer, 2023

Selected Honors and Awards

🏆 Selected for Google CSRMP 2023 program.	2023
🏆 Travel Grant for NeurIPs conference.	2022
🏆 Ram's Horn Best Project Award in EE381K Digital Video Class, UT Austin.	2021
🏆 Excellent Master's Thesis Award.	2019
🏆 Outstanding International Student Award, International College of CQUPT, China.	2019
🏆 Technology Innovation Award, International College of CQUPT, China.	2019
🏆 Honorary Mention Award in IEEE ComSoc Student's Competition.	2018
🏆 Chinese Government Scholarship.	2016–2019
🏆 Newspaper coverage for project– communication system for mute people.	2014
🏆 Secured 2 nd position in national embedded systems design competition at 'KSHITIJ-2013', IIT, KGP.	2013

Demos, Posters and Talks

📄 Generative Masking and In-painting for Videos. (Demo)	CVPR Demos, 2023
📄 Understanding the Effectiveness of Early Weight Averaging for Training LLMs. (Poster)	6G@UT, 2023
📄 Object masking and inpainting a.k.a Harry Potter's spell. (Talk)	MLL Symposium, 2022
📄 Do Neural Networks Overthink? (Talk)	Austin DL, 2021

Selected Professional Services

📄 Organized Broadening Research Collaborations in ML (BRCML), workshop at NeurIPs.	New Orleans, 2022
📄 Volunteered for the LevelUp org to help students for grad school applications.	Virtual, 2022
📄 Leader of the DEI Student Committee at Cockrell School of Engineering, UT Austin..	Austin, 2023
📄 Reviewer for NeurIPs 2022/23 workshops, IEEE Access, IEEE VTC 2019 Fall, IEEE ICC 2019, and IEEE ICC 2019.	Virtual, 2019–2022
📄 Member of the program committee for NeurIPs 2022 BRCML workshop, ACM/SIGAPP SAC 2019.	Virtual, 2019–2022

Entrepreneurial Distinctions

📄 Secured 2 nd position in Belt and road business innovation challenge.	China, 2017
📄 Secured 2 nd position in Scotia Bank data analytic Challenge hosted by Tech Mahindra.	Canada, 2016
📄 Participated in Google start up weekend 2015 organized by NASSCOM at IIM Calcutta.	India, 2015

Teaching

📄 TA for EE 460J Data Science Lab taught by Prof. Constantine Caramanis at UT Austin.	Spring, 2021
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Technical Skills

- 📄 **Programming Languages:** Python, Pytorch, Numpy, Pandas, Scikit learn, Deepspeed, Huggingface, SQL, and Matlab.
- 📄 **Systems:** Linux, AWS EC2, Cudatoolkit, Arduino, and Raspberry Pi.
- 📄 **Writing:** Latex, Gephi and various visualization tools.