**Sunny Sanyal**

**Present Address:** 1626 West Sixth Street, Gateway Apartments Apt# B, Austin, Texas 78703

**Email:** [sanyal.sunny@utexas.edu](mailto:sanyal.sunny@utexas.edu) | **Phone:** +1 512-888-5211 | [Homepage](https://sites.google.com/view/sunnysanyal/home) | [Github](https://github.com/sanyalsunny111) | [Scholar](https://scholar.google.co.uk/citations?user=xx9rrGMAAAAJ&hl=en&oi=ao)

**Research Interests:** Foundational Models | Pretraining | Finetuning | Distillation

**Education**

**The University of Texas at Austin** 08/2020-present

PhD in Electrical and Computer Engineering

GPA: 3.81/4

Advisor: Prof. Sujay Sanghavi [[Bio](http://users.ece.utexas.edu/~sanghavi/)]

**Chongqing University of Posts and Telecommunications** (CQUPT)**,** China 09/2016-06/2019

M.Eng. by research in Communication and Information Systems

GPA: 92.22/100 (Top 1% in entire batch)

Dissertation: Data Aggregation Techniques for Internet of Things

Advisor: Prof. Dapeng Wu [[google scholar](https://scholar.google.com/citations?hl=en&user=NToLSTUAAAAJ&view_op=list_works&sortby=pubdate)]

**Maulana Abul Kalam Azad University of Technology,** India 08/2011-07/2015

**(***Formerly known as West Bengal University of Technology, India***)**

B.Tech. in Electronics and Communication Engineering

DGPA: 8.23/10 (Top 10% in class)

**Work Experience**

**Amazon Science (Alexa AI),** Sunnyvale, CA Summer 2022

Applied Scientist Intern

* Worked on vision language pretraining of multimodal transformers for VQA.
* Performed knowledge distillation.

**Tech Mahindra Limited,** Hyderabad, India 2015-2016

Associate software engineer

* Worked within the offshore team to develop a website for ACRA government of Singapore.
* The project is based on Oracle ADF platform and uses basic Java and SQL.

**Selected Publications**

* **Sunny Sanyal**, Jean Kaddour, Abhishek Kumar, and Sujay Sanghavi, “Understanding the Effectiveness of Early Weight Averaging for Training Large Language Models”, 5 June 2023. [[pre-print](https://arxiv.org/abs/2306.03241)]
* **Sunny Sanyal** and Animesh, “DeepMines: A fog enabled prediction platform for underground coal mines”, IEEE COMSNETS 2020: MINDS Workshop, Bengaluru, India, 7-11 January 2020. **[Honorary Mention Award at IEEE ComSoc Student Competition 2018]**
* **Sunny Sanyal**, “Data Aggregation Techniques for Internet of Things”, Master's Thesis, Chongqing University of Posts and Telecommunications, Chongqing, China, 24 June 2019. [[link](https://arxiv.org/abs/1907.11367)] **[Excellent Master’s Thesis Award]**
* **Sunny Sanyal**, Dapeng Wu, Boubakr Nour, “A Federated Filtering Framework for Internet of Medical Things”, IEEE ICC 2019 conference, Shanghai, China, 20-24 May 2019. [[link](https://ieeexplore.ieee.org/document/8761381)] [Top ~1% conference]
* **Sunny Sanyal**, Punning Zhang, “Improving Quality of Data: IoT data aggregation using device to device communications”, IEEE Access, Vol. 6, page. 1-11, Nov. 2018. [[link](https://ieeexplore.ieee.org/document/8528395)] [IF: 4.098]
* **Sunny Sanyal**, Wu Dapeng, Junjie Yan, Xing Li, “Co-relative mobility based IoT data uploading using D2D communication”, In Proc. of 10th EAI Mobimedia, Chongqing, China, 13-14 July 2017. [[link](https://dl.acm.org/citation.cfm?id=3191431)]
* Dapeng Wu , Junjie Yan, **Sunny Sanyal**, Ruyan Wang, “Trust oriented partner selection in D2D cooperative communications”, IEEE Access, Vol. 5, page. 3444-3453, February 2017. [[link](http://ieeexplore.ieee.org/document/7858732/)] [IF: 4.098]
* **Sunny Sanyal** , Simpy Sanyal, “Automatic switching of home appliances one sensor to many system approach”, In Proc. of 6th IEEE Power India International Conference, Delhi, India, 6th Dec 2014. [[link](https://ieeexplore.ieee.org/document/7117719/)]

**Selected Honors and Awards**

* Selected for Google CSRMP 2023 program. 10/2023
* Ram’s Horn Best Project Award in EE381K Digital Video Class, UT Austin. [[demo](https://www.youtube.com/watch?v=k1xHYtVs7J0&t=127s)] 05/2021
* Excellent Master’s Thesis Award, Chongqing Univ. of Posts and Telecom, China. 06/2019
* Outstanding International Student Award, International College of CQUPT, China. 06/2019
* Technology Innovation Award, International College of CQUPT, China. 04/2019
* Honorary Mention Award in IEEE ComSoc Student’s Competition 2018. 11/2018
* Chinese Government Scholarship. 2016-2019
* Selected for IEEE ComSoc summer school with IEEE accommodation grant. 06/2018
* Newspaper coverage for project ‘Communication system for mute people’. 04/2014
* Secured 2nd position in national level embedded systems design contest at 02/2013

‘KSHITIJ-2013’, Indian Institute of Technology, Kharagpur.

**Demo, Posters and Talks**

* Demo at [Art Gallery](https://cvpr2023.thecvf.com/Conferences/2023/CallForDemos) CVPR 2023 on Generative Masking and In-painting for Videos. [[demo](https://youtu.be/k1xHYtVs7J0)]
* Poster at [6G@UT](https://www.6gutforum.org/) symposium 2023 on Understanding the Effectiveness of Early Weight Averaging for Training LLMs.
* Poster at ML Lab Research symposium 2022 on Object masking and inpainting a.k.a Harry Potter’s spell. [[link](https://ml.utexas.edu/node/190)]
* Invited talk (in-person) at Austin Deep learning community’s main event on Do Neural Networks Overthink? [[link](https://www.meetup.com/Austin-Deep-Learning/events/283660232/)]

**Selected Professional Services**

* [Broadening Research Collaborations in ML](https://sites.google.com/view/broadening-collaboration-in-ml/home?pli=1), NeurIPS workshop 2022, New Orleans, US. [**organizer**]
* Peer Mentor in [The LevelUp Org](https://leveluptoday.org/Home), volunteering to help PhD applicants for grad school apps.
* Member of Student Board, Diversity Equity and Inclusivity, Cockrell School of Engineering, UT Austin.
* IEEE Access Journal. [**reviewer**]
* IEEE VTC 2019-Fall: Recent Results track, 2019, Honolulu, Hawaii. [**reviewer**]
* IEEE International Conference on Communications: SAC E-Health Track, 2019, Shanghai, China. [**reviewer**]
* IEEE International Conf. on Computer Communications and Networks, 2019, Spain. [**reviewer**]
* ACM/SIGAPP Symposium On Applied Computing, 2019, Cyprus**.** [**program committee**]
* IEEE ComSoc Young Professionals Event, 2019, Shanghai, China.[**volunteer**]

**Entrepreneurial Distinctions**

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

**Programming Skills**: Python, Pytorch, Numpy, Pandas, Scikit learn, Deepspeed, Huggingface, SQL, Matlab, and Gephi.

**Systems development Skills**: Linux, AWS EC2, Cudatoolkit, Arduino, Latex, Uno and Raspberry Pi.