

---

# 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](#) | [Github](#) | [Scholar](#)

**Research Interests:** Vision and Language Models | Transformer | Distillation | Pretraining

## Education

**The University of Texas at Austin** 08/2020-present  
PhD in Electrical and Computer Engineering  
GPA: 3.78/4  
Advisor: Prof. Sujoy Sanghavi [[Bio](#)]

**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](#)]

**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 transformers using knowledge distillation for on device downstream tasks such as VQA.
- Distilled Unimodal teacher transformers (ALBEF) into a small multimodal student transformer (ViLT).

**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.

## Graduate Employment Experience

Teaching Assistant for EE 460J Data Science Lab with Prof. Constantine Caramanis Spring 2022

- Conducted hands on lab sessions for a class of 85+ students (both undergraduate and graduate).
- Started social hours and ML/DL paper reading club to discuss the recent trends in AI.

Member of the Key Laboratory of Ubiquitous Sensing and Networking in Chongqing, China 01/2017- 07/2019

- Developed efficient data aggregation frameworks for massive IoT networks using D2D and federated learning.
- Developed algorithms and hardware to predict accidents due to methane gas in Chinese coal mines.

## Relevant Courses

- Courses at UT Austin: Complex networks in real worlds (EE 282V) | Digital Video (EE 381K) | Adv. Topics in Computer Vision (EE 381V) | Data Mining (ECE 380 L) | Probability and Stochastic Processes I (EE 381J).
- Courses during Master's degree: Signal processing | Audio and Video signal processing | Digital Communications | Adv. Communication and networking theory | Numerical analysis.

## Selected Publications

- **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](#)] [**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](#)] [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](#)] [IF: 4.098]
- **Sunny Sanyal**, Wu Dapeng, Junjie Yan, Xing Li, “Co-relative mobility based IoT data uploading using D2D communication”, In Proc. of 10<sup>th</sup> EAI Mobimedia, Chongqing, China, 13-14 July 2017. [[link](#)]
- 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](#)] [IF: 4.098]
- **Sunny Sanyal** , Simpy Sanyal, “Automatic switching of home appliances one sensor to many system approach”, In Proc. of 6<sup>th</sup> IEEE Power India International Conference, Delhi, India, 6<sup>th</sup> Dec 2014. [[link](#)]

## Selected Honors and Awards

- |   |           |
|---|-----------|
| • Ram's Horn Best Project Award in EE381K Digital Video Class, UT Austin [ <a href="#">demo</a> ]   | 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 2 <sup>nd</sup> position in national level embedded systems design contest at ‘KSHITIJ-2013’, Indian Institute of Technology, Kharagpur | 02/2013   |

## Outreach and Presentations

- Poster at ML Lab Research Symposium 2022 on Object masking and inpainting a.k.a Harry Potter's spell. [[link](#)]
- Invited talk (in-person) at Austin Deep learning community's main event on Do Neural Networks Overthink? [[link](#)]

## Selected Professional Services

- [Broadening Research Collaborations in ML](#), NeurIPS workshop 2022, New Orleans, US. [**organizer**]
- Peer Mentor in [The LevelUp Org](#), 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 2<sup>nd</sup> position in Belt and road business innovation challenge 2017 ,China.
- Secured 2<sup>nd</sup> 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, Huggingface, Arduino, Latex, Uno and Raspberry Pi.