
Sunny Sanyal

Present Address: Niroj Villa, 56/2 B.M Banerjee Road, Kolkata, West Bengal, India 700056
Email: sanyal.sunny111@yahoo.com **Portfolio:** <https://sites.google.com/view/sunnysanyal/home>

Research Interests: Wireless Networks | Network Architecture | Machine Learning | Optimization

Applications: Internet of Things | Cyber Physical Systems | Cooperative Communications | Federated Learning over Networks | Edge Computing | Cloud Computing

Education

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

The Key Laboratory of Ubiquitous Sensing and Networking in Chongqing, P.R. China 01/2017-07/2019
Graduate research student

- The master's thesis presents novel data aggregation frameworks for delivery networks, social networks, and inference networks based on resource-constrained IoT devices. The experiments simulated in Matlab and Python have shown to improve the state of energy efficiency, scalability, data veracity, and inference accuracy.
- The projects are jointly funded by NSF China and other governmental grants.
- **Approaches:** Bayesian rough sets, SGD/ADMM Optimization, Approximation, Federated learning, LSTM

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.

Tronix India company, Kolkata, India 2013-2015
Co-founder and Manager

- Developed prototypes of wearable assistive technologies and home automation devices.
- Delivered robotics training to underprivileged school kids.
- Participated in Industrial India Trade Fair 2014 to exhibit our prototypes and raise funds.

Indian Statistical Institute, Computer Vision and Pattern Recognition Lab, India Summer'14
Summer Internship, Advisor: Dr. Sarbani Palit [[homepage](#)]

- Developed a prototype (hardware and software) for webcam based video pattern matching application.

Tezpur University, Computer Science Department, India Summer'13
Summer Internship, Advisor: Dr. Bhogeswar Borah [[homepage](#)]

- Developed a digital image filter for cleaning salt and pepper noise infected grayscale images.

Peer Reviewed 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. [[link](#)] [[demo](#)] **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](#)]

- **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 10th 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]
- Simpy Sanyal , **Sunny Sanyal**, “Exhilaration of Fuel Economy via Genetic Algorithm”, Indian Centre for Advanced Scientific and Technological Research journal of engineering, Vol. 8, No. 2(2015), May 2015. [[link](#)]
- **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](#)]
- **Provisional Patent** “Communication System for dumb (Dumb Shirt)” Application ID: 400/KOL/2015. [[link](#)]

Selected Academic Distinctions

• 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 and travel grant	2016-2019
• Selected for IEEE ComSoc summer school with IEEE accommodation grant	06/2018
• Offered travel grant for IEEE ICRERA 2014, USA by Indian National Academy of Engineering	11/2014
• Secured 3 rd position in project idea competition, ‘E-NOVATION’	07/2014
• Newspaper coverage for project ‘Communication system for mute people’	04/2014
• Secured 3 rd position in demo competition, ‘INQUIVESTA’ at Indian Institute of Science Education and Research, Kolkata, India	02/2014
• Best paper presentation award in inter university competition, ‘PARIDHI’	01/2014
• Secured 2 nd position in inter university project Idea competition, ‘EXSORSA-2013’	03/2013
• Secured 2 nd position in national level embedded systems design contest at ‘KSHITIJ-2013’, Indian Institute of Technology, Kharagpur	02/2013

Professional Services

- 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 International Conference on Emerging and Emerging Technologies, 2019, Lahore, Pakistan. [**program committee**]
- EAI International conference on future access enablers of ubiquitous and intelligent infrastructure, 2019, Bulgaria. [**TPC**]
- EAI International conference on ubiquitous communications and network computing, 2019, India. [**publicity co-chair**]
- EAI International conference on innovations and interdisciplinary solutions for underserved areas, 2019, Egypt. [**reviewer**]
- IEEE ComSoc Young Professionals Event, 2019, Shanghai, China. [**volunteer**]

Membership: IEEE student member, IEEE Communications Society, IEEE Internet of Things community, IEEE Young Professionals, Quora Partner Program (by [invitation](#)), EAI member

Invited Talk: Global Youth Talk 2017, Chongqing, China [[video](#)][[certificate](#)]

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

Computing Skills: Matlab, Simulink, Octave, Java, Python, SQL | **Academic Tools:** Latex, MS Visio, Origin, Mendeley
Languages: English, Chinese, Hindi, Bengali, Chhattisgarhi