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 | Autonomous Systems | Machine Learning | Optimization
Applications: Internet of Things | Cyber Physical Systems | Cooperative Communications | Federated Learning

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. [Accepted] **[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**, Boubakr Nour and Hassine Moungla "Advanced Deep Neural Networks at the Edge of Internet of Things", Elsevier Computer Communications. [submitted | IF: 2.766]
- **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 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 3rd position in project idea competition, 'E-NNOVATION'	07/2014
Newspaper coverage for project 'Communication system for mute people'	04/2014
Secured 3rd 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 2nd position in inter university project Idea competition,'EXSORSA-2013'	03/2013
Secured 2nd 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