

Sunny Sanyal

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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	
<ul style="list-style-type: none">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	
<ul style="list-style-type: none">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	
<ul style="list-style-type: none">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]	
<ul style="list-style-type: none">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]	
<ul style="list-style-type: none">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 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’ 02/2014
at Indian Institute of Science Education and Research, Kolkata, India
- 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 02/2013
‘KSHITIJ-2013’, Indian Institute of Technology, Kharagpur

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