

Nan Cen (Nancy)

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RESEARCH INTERESTS

Visible Light Networking: protocol design, software-defined control, network optimization

Internet of Things: optimal video streaming over constrained devices, coding/decoding architecture design, video streaming based on compressed sensing, drone ad hoc networks

5G: massive MIMO and beamforming

EDUCATIONAL BACKGROUND

Northeastern University, Boston, MA USA

Ph.D. in Electrical and Computer Engineering, 2014 – 2019.

Thesis: "*New Wireless Technologies for Next-Generation Internet-of-Things*"

Advisor: Prof. Tommaso Melodia

GPA: 4.0/4.0

University at Buffalo, The State University of New York, Buffalo, NY USA

Master of Science in Electrical Engineering, 2012 – 2014.

Advisor: Prof. Tommaso Melodia

GPA: 3.944 / 4.000

Shandong University, Jinan, Shandong, China

Master of Engineering in Information and Communication system, 2008 – 2011

Advisor: Prof. Dongfeng Yuan

Thesis: 2 x 2 MIMO-OFDM Real-time Testbed Design and Implementation

Shandong University, Jinan, Shandong, China

Bachelor of Science in Communication Engineering, 2004 – 2008

EMPLOYMENT HISTORY

Assistant Professor – Missouri University of Science and Technology (October 2019)

Graduate Research Assistant – Northeastern University (Sep. 2014 – Sep. 2019)

Research Intern – Bell Labs (June 2014 – August 2014)

Graduate Research Assistant – University at Buffalo, The State University of New York (Sep. 2012 – May 2014)

Software Engineer – Alcatel-Lucent Enterprise, Qingdao, China (Sep. 2011 – May 2012)

Summer Intern – IBM, Jinan, China (June 2010 – July 2010)

PUBLICATIONS

Total Google Scholar Citation: 97, h-index: 6

Journals and Magazines

1. N. Cen, Z. Guan, T. Melodia, "Low-Power Multimedia Internet of Things through Compressed Sensing based Multi-view Video Streaming," *IEEE Transactions on Mobile Computing*, under revision, 2018.
2. Z. Guan, N. Cen, T. Melodia, S. Pudlewski, "Joint Power, Association and Flight Control for Massive-MIMO Self-Organizing Flying Drones", *IEEE/ACM Transactions on Networking*, accepted.
3. N. Cen, J. Jagannath, S. Moretti, Z. Guan, T. Melodia, "LANET: Visible-Light Ad Hoc Networks," *Ad Hoc Networks (Elsevier)*, vol. 84, pp. 107-123, March 2019. (Citations: 9)
4. N. Cen, Z. Guan, T. Melodia, "Inter-view Motion Compensated Joint Decoding of Compressive-Sampled Multi-view Video Streaming," *IEEE Transactions on Multimedia*, vol. 19, no. 6, pp. 1117-1126, June 2017. (Citations: 9)
5. S. Pudlewski, N. Cen, Z. Guan, T. Melodia, "Video Transmission over Lossy Wireless Networks: A Cross-layer Perspective," *IEEE Journal on Selected Topics in Signal Processing*, vol. 9, no. 1, pp. 6-22, February 2015. (Citations: 47)

Conferences

6. N. Cen, N. Dave, E. Demirors, Z. Guan, T. Melodia, "LiBeam: Throughput-Optimal Cooperative Beamforming for Indoor Visible Light Networks", in *Proc. of IEEE Conference on Computer Communications (INFOCOM)*, Paris, France, April 2019 (Acceptance ratio: 19.2%).
7. Z. Guan, N. Cen, T. Melodia, S. Pudlewski, "Self-Organizing Flying Drones with Massive MIMO Networking," in *Proc. of Mediterranean Ad Hoc Networking Workshop (Med-Hoc-Net)*, Capri, Italy, June 2018. (Citations: 6)
8. N. Cen, Z. Guan, T. Melodia, "Poster Abstract: LANET: Software-defined Visible-Light Ad Hoc Networks," in *IEEE ICC Joint 7th N2Women and WICE: Professional Development Workshop*, Kansas City, MO, USA, May 2018.
9. N. Cen, Z. Guan, T. Melodia, "Multi-view Wireless Video Streaming Based on Compressed Sensing: Architecture and Network Optimization," in *Proc. of ACM Intl. Symp. on Mobile Ad Hoc Networking and Computing (MobiHoc)*, Hangzhou, China, June 2015 (Acceptance ratio: 14.8%). (Citations: 8)
10. N. Cen, Z. Guan, T. Melodia, "Joint Decoding of Independently Encoded Compressive Multi-view Video Streams," in *Proc. of Picture Coding Symposium (PCS)*, San Jose, CA, December 2013. (Citations: 10)
11. J. Sun, N. Cen, D. Yuan, "Implementation of a 2x2 MIMO-OFDM Real-Time System on DSP/FPGA Platform," in *Proc. Of Communications and Mobile Computing (CMC)*, Qingdao, China, April 2011. (Citations: 8)

PATENTS

1. Method to Compute Soft-bit Information for Gray π /M-MPSK Modulation, Publication No. CN10193 8333 B.
2. A New Parallel Method to Compute Soft-bit Information for Gray M-QAM Modulation, Publication No. CN101764773 A.
3. A Method for Timing and Carrier Recovery in Wireless Communication Systems, Publication No. CN101753289 A.
4. A Method for Real-time Video Transmission for MIMO-OFDM System, Publication No. CN101729879 B.

HONORS AND AWARDS

Distinguished Research Assistant Award, Department of Electrical and Computer Engineering, Northeastern University (2019)

Computing Research Association-Women (CRA-W) and ComSoc Travel Grant (2018)

NSF Student Travel Grant (2015)

N2Women Young Researcher Fellowship (2015)

Honor Graduate Student of Shandong University, Excellent Leader of Graduate Student Union (2009 – 2010)

National Scholarship of China (2008 – 2009)

Presidential Fellowship, First Prize Scholarship, Excellent Leader, Excellent Student in Social Practice (2006 – 2007)

First Prize Scholarship, Excellent Student in Social Practice (2005 – 2006)

First Prize Scholarship, Best Student in Military Training (2004 – 2005)

PROFESSIONAL ACTIVITIES AND SERVICE

Technical Program Committee Membership

IEEE INFOCOM Workshop WCNEE, 2020

IEEE/ACM IWQoS 2020

IEEE PIMRC 2020

IEEE WPSN 2020

Reviewer Activities

IEEE Journals: IEEE Journal on Selected Area in Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Multimedia, IEEE Transactions on Mobile Computing, IEEE Transactions on Networking,

Elsevier Journals: Computer Networks

Wiley Journals: Transactions on Emerging Telecommunications Technologies

Conferences: : INFOCOM, MASS, GLOBECOM, PIMRC, MILCOM, WCNC, WCS, WONS, MILCOM, WiMob, Med-Hoc-Net, BlackSeaCom

Departmental, School and University Services

Ph.D. Thesis Committee Member for Ayan Roy (Advisor: Prof. Sanjay Madria) Nov. 2019

STUDENT SUPERVISION

M.S. Students (Thesis)

Yuwei Long

Undergraduate Students

Erik Lee

SCHOLARLY TALKS

"LANET: Software-defined Visible-light Ad Hoc Networks", Presentation on Joint 7th N2Women and WICE: Professional Development Workshop, Kansas City, MO, USA, May 2018.

"Multiview Wireless Video Streaming Based on Compressed Sensing: Architecture and Network Optimization", Presentation on ACM Intl. Symp. on Mobile Ad Hoc Networking and Computing (MobiHoc), Hangzhou, China, June 2015.

"Joint Decoding of Independently Encoded Compressive Multi-view Video Streams", Presentation on Picture Coding Symposium (PCS), San Jose, CA, December 2013.

PROFESSIONAL MEMBERSHIP

Member, Institute of Electrical and Electronics Engineers (IEEE)

Member, IEEE Communication Society

Member, IEEE Women in Engineering Membership

Member, Association for Computing Machinery (ACM)

COURSES TAUGHT

Spring 2020, CS6603, Special Topics on Wireless Networks