PROGRAM AT A GLANCE

WOCC, Friday, May 1, 2020

10:30–10:35	**Opening Remarks**			
10:35–11:35	K1 **Keynote Session** (*Chair: Xin Jiang*)	**Prof. Thomas L. Marzetta** - New York University, ***"Sixth-Generation Wireless: The World Will Expect it, But It Will Not Be So Easy to Deliver!"***		
11:35–12:35	K2 **Keynote Session** (*Chair: Xin Jiang*)	**Prof. Alan E. Willner -** University of Southern California, ***"High-Capacity Free-Space Optical and Millimeter-Wave Communications Using Mode-Division-Multiplexing"***		
12:35–13:30	Lunch			
13:30–15:10	W1 **Antenna, Filter and Modulation** *Chair: Guosen Yue* *Futurewei Technologies*	O1 **Fiber Transmission and System** *Chair: Ioannis Roudas* *MSU Bozeman*	N1 **Computing Systems and Performance** *Chair: Hong Zhao* *FDU*	B1 **Big Data Analytics and Machine Learning Methods** *Chair:Zhi Wei* *NJIT*
15:10–15:30	Break			
15:30–17:30	W2 **Machine Learning and AI for Wireless Communication** *Chair: Lingjia Liu* *Virginia Tech*	O2 **Photonic Device** *Chair: Nicholas Madamopoulos* *City College of CUNY*	N2 **Future Internet Architecture and Security** *Chair: Yaoqing Liu* *FDU*	

WOCC, Saturday, May 2, 2020

10:30–10:40	**Best Paper Award ceremony**			
10:40–11:40	K3 **Keynote Session** (*Chair: Meilong Jiang*)	**Prof. Lizhong Zheng** - Massachusetts Institute of Technology, ***"Using Deep Neural Networks in Physical Layer Communication Problems"***		
11:40–12:40	K4 **Keynote Session** (*Chair: Meilong Jiang*)	**Prof. Yingying Chen** - Rutgers University, ***"Exploring the Power of Pervasive Sensing for IoT Security and Smart Healthcare"***		
12:40–13:30	Lunch			
13:30–15:10	W3 **Satellite and Future Wireless Networks** *Chair: Zhangyang Zhang* *College of Staten Island, CUNY*	O3 **Photonic Network and Free Space Communication** *Chair: Zhaoran Rena Huang* *Rensselaer Polytechnic Institute*	B2 **Deep Learning Based Emerging Technology** *Chair: Bin Li* *University of Rhode Island*	
15:10–15:30	Break			
15:30–17:10	W4 **Emerging Network Technologies** *Chair: Yudong Yao* *Stevens Institute of Technology*	O4 **Visible Light Communication** *Chair: Xin Jiang* *College of Staten Island, CUNY*		

K – Keynote	W – Wireless	O – Optical	N – Network	B –Big Data

WOCC Technical Sessions – Friday, May 01, 2020, 13:30 – 15:10

W1 Antenna, Filter and Modulation

Chair: Guosen Yue
Futurewei Technologies

Efficient Methods and Architectures for Mean and Variance Estimations of QAM Symbols
Guosen Yue **(Invited)** and Xiao-Feng Qi
Futurewei Technologies, Inc, USA

Automatic Modulation Classification and SNR Estimation Based on CNN in Physical-layer Network Coding
Xuesong Wang,Yuna He, Yang Sun and Yueying Zhan
Chinese Academy of Sciences, China

Non-coherent autocovariance receiver for DPSK-k modulation invariant to channel distortions
Gerardo Ramirez, Fernando Peña, Ramon Parra-Miche, and Valeri Ya Kontorovich
CINVESTAV, Mexico

Joint Hybrid Beamforming and Dynamic Antenna Clustering for Massive MIMO
Ahmad Ghasemi and Seyed (Reza) Zekavat
Worcester Polytechnic Institute (WPI), USA

O1 Fiber Transmission and System

Chair: Ioannis Roudas
Montana State University, Bozeman

Nonlinear GN model for coherent optical communication systems with hybrid fiber spans
I. Roudas (**Invited**), X. Jiang, and J. Kwapisz
Montana State University, Bozeman, Montana, USA

Modern Undersea Cable Systems Evolution
Ruomei Mu **(Invited)**
Subcom, NewJersey, USA

Mitigating the signal distortion in multilevel Manchester-based optical communications systems using optical equalization technique
F. I. Oluwajobi, A.Malekmohammadi , D. Nguyen, and N. Khan
California Polytechnic State University, California, USA

Dual Frame OFDM with Optical Phase Conjugation
Usha Choudhary; Vinjay Janyani, and Muhammad Arif Khan
Malaviya National Institute of Technology Jaipur, India

N1 Computing Systems and Performance

Chair: Hong Zhao
FDU

Decentralized Continuous Game for Task Offloading in UAV Cloud
Ang Gao, Tianli Geng, Yansu Hu, Wei Liang, Weijun Duan
Northwestern Polytechnical University, China

Benchmarking Network Performance in Named Data Networking (NDN)
Yaoqing Liu, Anthony Dowling, and Lauren Huie
Fairleigh Dickinson University, New Jersey, USA

Data Visualization for Wireless Sensor Networks Using ThingsBoard
Matthew Henschke, Xinzhou Wei, and Xiaowen Zhang
College of Staten Island, CUNY, NewYork, USA

B1 Big Data Analytics and Machine Learning Methods

Chair: Zhi Wei
NJIT

Integrating Data-driven Approaches to Improve Performance of Solving SCUC
Xiaoyu Sean Lu **(Invited)**
Stevens Institute of Technology, NJ, USA

Federated Learning meets Wireless Communication
Mingzhe Chen **(Invited)**
Princeton University, Princeton, NJ, USA

Data-driven Surplus Material Prediction in Steel Coil Production
Ziyan Zhao, Xiaoyue Yong, Shixin Liu, and Mengchu Zhou
Northeastern University, Shenyang, China

Research on Hainan Trusted Digital Infrastructure Construction Framework
Kun Zhang, Chong Shen, and Keliu Long
Northeastern University, Shenyang, China

WOCC Technical Sessions – Friday, May 01, 2020, 15:30 – 17:30

W2 Machine Learning and AI for Wireless Communication

Chair: Lingjia Liu
Virginia Tech

Reservoir Computing Meets Wi-Fi in Software Radios Neural Network-based Symbol Detection using Training Sequences and Pilots
Lianjun Li, Lingjia Liu **(Invited)**, Jianzhong (Charlie) Zhang, Jonathan D. Ashdown, and Yang Yi
Virginia Tech, Virginia, USA

Blind Source Separation with L1 Regularized Sparse Autoencoder
Jason Dabin, Justin Mauger, Alexander M. Haimovich and Annan Dong
Naval Information Warfare & New Jersey Institute of Technology, USA

Identification of ISM Band Signals Using Deep Learning
Mingju He, Shengliang Peng, Huaxia Wang, and Yu-Dong Yao
Stevens Institute of Technology, NJ, USA

MAC Protocol Identification Using Convolutional Neural Networks
Yu Zhou, Shengliang Peng, and Yu-Dong Yao
Stevens Institute of Technology, NJ, USA

LDPC Code Classification using Convolutional Neural Networks
Bradley Comar
Department of Defense, USA

O2 Photonic Device

Chair: Nicholas Madamopoulos
City College of CUNY

Multifunctional Photonic Signal Processing Platforms for Analog and Digital Signal Processing
Nicholas Madamopoulos **(Invited)**
City College, CUNY
New York, USA

Symbol Error Rate Analysis of 8-state Stokes Vector Modulation for Large Capacity Data Centers
Mario V. Bnyamin, Mark D.Feuer, and Xin Jiang
College of Staten Island, CUNY,
New York, USA

Characteristics of A Frequency-doubled Solid-state Laser with Tunable Pulse Width
Ya-Jiang Li, Jian-Guo Xin and Teng Sun
Beijing Institute of Technology
Beijing, China

N2 Future Internet Architecture and Security

Chair: Yaoqing Liu
FDU

Empowering Named Data Networks for Ad-Hoc Long-Range Communication
Yaoqing Liu,Lauren Njilla, Anthony Dowling, Wan Du
Fairleigh Dickinson University,
New Jersey, USA

DASC: A Privacy-Protected Data Access System with Cache Mechanism for Smartphones
Wenyun Dai, Longbin Chen, Ana Wu, and Md Liakat Ali
Fairleigh Dickinson University,
New Jersey, USA

Detecting host location attacks in SDN-based networks
Sonali Sen Baidya and Rattikorn Hewett
Texas Tech,
Texas, USA

WOCC Technical Sessions – Saturday, May 02, 2020, 13:30 – 15:10

W3 Satellite and Future Wireless Networks

Chair: Zhangyang Zhang
College of Staten Island, CUNY

Process-Oriented Optimization for Beyond 5G Cognitive Satellite-UAV Networks
Chengxiao Liu, Wei Feng (**Invited**), Yunfei Chen, Cheng-Xiang Wang, Xiangling Li, and Ning Ge
Tsinghua University, China

Dual Splash Plate Parabolic Stacked Antenna for Satellite Communication System Consolidation s
Clive Sugama and V. Chandrasekar
Colorado State University, USA

Optimal UAV Positioning for a Temporary Network Using an Iterative Genetic Algorithm
Nicholas Ceccarelli, Paulo A Regis, Shamik Sengupta, and David Feil-Seifer
SUNY University at Buffalo, NewYork, USA

Hybrid FSO/mmWave based Fronthaul CRAN Optimization for Future Wireless Communications
Nagwa Ibrahim, Ashraf A Eltholth, and Magdy El-Soudani
National Telecommunication Institute Cairo, Egypt

Routing Algorithm with High Credibility and Stability (RACS) in WWSN-based Internet of Medical Things
Kefeng Wei, Lincong Zhang, and Lei Guo
Northeastern University, China

O3 Photonic Network and Free Space Communication

Chair: Zhaoran Rena Huang
Rensselaer Polytechnic Institute

Photonic True Time Delay-Line Reservoir Computer for Time Series of Signals Classification and Prediction
Zhaoran Rena Huang **(Invited)**
Rensselaer Polytechnic Institute,
Troy, New York, USA

Outdoor Optical Wireless Communication: potentials, standardization and challenges for Smart Cities
Véronique Georlette, Véronique Moeyaert, Sébastien Bette,and Nicolas Point
University of Mons, Mons, Belgium

Rain Effects on FSO and mmWave Links: Preliminary Results from an Experimental Study
Elizabeth Verdugo, Roberto Nebuloni, Lorenzo Luini, Carlo Riva, Luiz da Silva Mello, and Giuseppe Roveda
Pontificia Universidade Catolica do Rio de Janeiro
Rio de Janeiro, Brazil

An Adaptive DPPM for Efficient and Robust Visible Light Communication Across the Air-Water Interface
Md Shafiqul Islam and Mohamed Younis
University of Maryland Baltimore County
Baltimore, Maryland, USA

B2 Deep Learning Based Emerging Technology

Chair: Bin Li
University of Rhode Island

Text Representation in Online Abusive Language Detection: An Empirical Study
Fei Tan (**Invited**)
Yahoo! Research,
New York,USA

Towards computationally efficient adversarial training defense against adversarial examples attacks to neural networks classifiers
Abdallah Khreishah (**Invited**)
New Jersey Institute of Technology(NJIT),
New Jersey, USA

A Convolutional Neural Network Approach to Improving Network Visibility
Bruce Hartpence, Andres Kwasinski
Rochester Institute of Technology,
Rochester, New York, USA

Deep Learning Methods for Mining Genomic Sequence Patterns
Xin Gao **(Invited)**
Amazon,
California, USA

WOCC Technical Sessions – Saturday, May 02, 2020, 15:30 – 17:10

W4 Emerging Network Technologies

Chair: Yudong Yao
Stevens Institute of Technology

Classification of QPSK Signals with Different Phase Noise Levels Using Deep Learning
Hatim Alhazmi, Alhussain Almarhabi, Abdullah Samarkandi, Mofadal Alymani, Mohsen H. Alhazmi, Zikang Sheng, and Yu-Dong Yao
Stevens Institute of Technology, New Jersey, USA

5G Signal Identification Using Deep Learning
Mohsen H. Alhazmi, Mofadal Alymani, Hatim Alhazmi, Alhussain Almarhabi, Abdullah Samarkandi, and Yu-Dong Yao
Stevens Institute of Technology, New Jersey, USA

Deep Learning in 5G Wireless Networks - Anomaly Detections
Minh Doan and Zhanyang Zhang
College of Staten Island, CUNY, New York, USA

Latency Optimization-based Joint Task Offloading and Scheduling for Multi-user MEC System
Tiantian Yang, Rong Chai, and Liping Zhang
Chongqing University of Posts and Telecommunications, Chongqing, China

Rician K-Factor Estimation Using Deep Learning
Mofadal Alymani, Mohsen H. Alhazmi, Alhussain Almarhabi, Hatim Alhazmi, Abdullah Samarkandi, and Yu-Dong Yao
Stevens Institute of Technology, New Jersey, USA

Network Coding for Integrated Access and Backhaul Wireless Networks
Wei Mao, Murali Narasimha, Meryem Simsek, Hosein Nikopour
Intel Corporation, Santa Clara, California, USA

O4 Visible Light Communication

Chair: Xin Jiang
College of Staten Island, CUNY

A low complexity NOMA scheme in VLC systems using pulse modulations
Jian Song **(Invited)**, Tian Cao, and Hongming Zhang
Tsinghua University, Beijing, China

Spectrally Efficient Cooperative Visible Light Communication with Adaptive Power Sharing for a Generalized System
Umang Garg, Nithin Raha J K, and B. Sainath
Birla Institute of Technology and Science (BITS), Pilani, India

Throughput of Optical WDM with Wide LED Spectra and Imperfect Color-detecting Filters
T. E. Bitencourt Cunha1, Jean-Paul M. G. Linnartz, and Xiong Deng
Eindhoven University of Technology, The Netherlands

Co-Channel Interference Management in Visible Light Communication
Mona Elsayed Hosney, Hossam A. I. Selmy, and Khaled M. F. Elsayed
National Telecommunication Institute, Cairo, Egypt