

## Hongda Wu

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LAS 3021, 4700 Keele Street, Toronto, ON, M3J 1P3, Canada  
+1 (437) 971-3789, hwu1226@eecs.yorku.ca, h.wu.yorku@gmail.com,

**RESEARCH INTERESTS** Theory and application of federated learning for wireless communications and networking, reinforcement learning, Internet of Things

**EDUCATION** **York University**, Toronto, ON, Canada  
**Ph.D.** in Electrical Engineering & Computer Science Sept. 2019 -  
Supervisor: Prof. Ping Wang (IEEE Fellow)  
GPA: 3.9/4.0

**Communication University of China**, Beijing, China  
**M.A.Sc.** in Electrical Engineering June, 2019  
GPA: 3.91/4  
**Ranked 1/206** in first academic year and won **National Scholarship**

**Inner Mongolia University**, Hohhot, China  
**B.Eng.** in Electrical Engineering (major) June, 2016  
**B.Man.** in Administration Management (minor)

## **PUBLICATION** **Journal Papers**

- [J1] **Hongda Wu**, Ali Nasehzadeh, Ping Wang, A Deep Reinforcement Learning-Based Caching Strategy For IoT Networks With Transient Data. *IEEE Transactions on Vehicular Technology*, under review, 2022
- [J2] Shufeng Li, Mingyu Cai, Libiao Jin, Yao Sun, **Hongda Wu**, Ping Wang, An Ultra-Reliable Low-Latency Non-Binary Polar Coded SCMA Scheme. *IEEE Transactions on Vehicular Technology*, under review, 2021
- [J3] **Hongda Wu**, Ping Wang, Node Selection Toward Faster Convergence for Federated Learning on Non-IID Data. *IEEE Transactions on Network Science and Engineering*, Early Access, 2022
- [J4] **Hongda Wu**, Ping Wang, Fast-Convergent Federated Learning with Adaptive Weighting. *IEEE Transactions on Cognitive Communications and Networking*, vol.7, no.4, pp. 1078-1088, 2021
- [J5] Shufeng Li, **Hongda Wu\***, Libiao Jin, Codebook-aided DOA Estimation Algorithm for Massive MIMO System. *Electronics*, 8(1), 26, 2019
- [J6] Shufeng Li, Guangjing Cao, Libiao Jin, **Hongda Wu** Channel Estimation Based on The PSS-MUSIC for Millimeter-wave MIMO Systems Equipped with Co-prime Arrays. *EURASIP Journal on Wireless Communications and Networking*, 17, 2020
- [J7] Shufeng Li, Baoxin Su, Libiao Jin, Mingyu Cai, **Hongda Wu** Joint Measure Matrix and Channel Estimation for Millimeter-Wave Massive MIMO with Hybrid Precoding. *EURASIP Journal on Wireless Communications and Networking*, 293, 2019

## **Conference Papers**

- [C1] **Hongda Wu**, Ping Wang, Probabilistic Node Selection for Federated Learning with Heterogeneous Data in Mobile Edge, *IEEE Wireless Communications and Networking Conference (WCNC)*, 2022

- [C2] **Hongda Wu**, Ping Wang, Fast-convergent Federated Learning with Adaptive Weighting. *IEEE Conference on Communication (ICC)*, 2021

### Conference Presentations

- [P1] Probabilistic Node Selection for Federated Learning with Heterogeneous Data in Mobile Edge.  
*IEEE International Conference on Communications (WCNC)* Austin, 2022
- [P2] Fast-Convergent Federated Learning with Adaptive Weighting.  
*IEEE International Conference on Communications (ICC)* Montreal, 2021
- [P3] An Iterative Adaptive Dictionary Learning Approach for Multiple Snapshot DOA Estimation. *IEEE Conference on Signal Processing (ICSP)* Beijing, 2018
- [P4] Construction of Compressed Sensing Matrix Based on Complementary Sequence.  
*IEEE Conference on Communication Technology (ICCT)* Chengdu, 2017

### Workshop

- [W1] Canadian Student Reading Group on Data Science, UBC Virtual, 2021
- [W2] Communication & Information Theory, Xidian University Xi'an, 2018

## TEACHING EXPERIENCE

### York University (*Ph.D. Stage*)

- EECS 4215: Mobile Communications Winter 2021 & 2022
- EECS 4214: Digital Communications Fall 2021
- EECS 3214: Communication Networks Fall 2020
- EECS 3213: Computer Network Protocols and Applications Fall 2020

### Research Camp

- *Wireless Communications System Design* Sept. 2019 - now  
Prof. Danijela Cabric, University of California, Los Angeles (IEEE Fellow)
- *Understanding Transistors and the Microelectronics Industry* August, 2019  
Prof. Ya-Hong Xie, University of California, Los Angeles
- Information Dissemination and Aggregation for the Next Decade January, 2019  
Prof. Bernhard Haeupler, Carnegie Mellon University

### Communication University of China (*Master Stage*)

- *Computer Network* Spring 2019
- *Stochastic Process* (Graduate Course) Fall 2018
- *Electronic Circuit* Fall 2017

## HONOURS AWARDS

- YU Graduate Fellowship-Doctoral York University, 2019 - 2023
- York Graduate Scholarship York University, 2019 - 2023
- CUPE Domestic Bursary Canadian Union of Public Employees, 2022
- **National Scholarship** (*Top 2%*) Ministry of Education, China, 2017
- **Outstanding Graduate Thesis** (Master Degree) CUC, 2019
- **Outstanding Graduates** CUC, 2019
- Merit Graduates (*Top 10%*) CUC, 2019

- **May 4th Youth Medal** (*Top 0.08%, 13/15000*)  
The Communist Youth League, CUC & Beijing, 2019
- **Innovation Scholarship for Graduate** (*Top 0.2%, 6/ $\approx$  3000*) CUC, 2018
- Merit Graduate Student (*Top 10%*) CUC, 2017, 2018
- First-Class Academic Scholarship (*Top 10%*) CUC, 2017, 2018
- Second-Class Academic Scholarship CUC, 2016
- **Outstanding Graduate Thesis** (Minor Degree of Bachelor) IMU, 2016
- Excellent Student Scholarship IMU, 2015
- Excellence Award, The 5th "ICBC Cup" National University Financial Design  
ICBC, 2014
- National Undergraduate Mathematical Contest CSIAM, 2014

## **PROFESSIONAL Technical Reviewer**

### **ACTIVITY**

- IEEE Transaction on Wireless Communication
- IEEE Transaction on Mobile Computing
- IEEE Transactions on Cognitive Communications and Networking
- IEEE Communications Letters
- IEEE Network Magazine
- IEEE International Conference on Communications (ICC)
- IEEE Global Communications Conference (GLOBECOM)
- IEEE Wireless Communications and Networking Conference (WCNC)
- IEEE Vehicular Technology Conference (VTC)

### **SKILLS**

*Languages & Software:* MATLAB, Python, C, MySQL  
*DL Library:* Tensorflow, PyTorch, Keras, PySyft