Ming Tang

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Research Interests

- Mobile edge computing; deep reinforcement learning; federated learning; crowdsourced intelligence; mobile video streaming and live streaming; network games and economics

Education

- **The Chinese University of Hong Kong** Aug. 2014 - Sep. 2018
  Ph.D., Department of Information Engineering
  Advisor: Prof. Jianwei Huang

- **Stanford University** Sep. 2017 - Feb. 2018
  Visiting Student, Department of Management Science and Engineering
  Advisor: Prof. Ramesh Johari

- **Sichuan University** Sep. 2010 - Jun. 2014
  B.E., Department of Electronics and Information Engineering
  Best Undergraduate Thesis Award, Outstanding Graduates Award
  GPA: 91.04/100, Rank: 4/244

Work Experience

- **The University of British Columbia** Nov. 2018 - Present
  Postdoc, Department of Electrical and Computer Engineering
  Advisor: Prof. Vincent W.S. Wong

Awards

- **Global Scholarship Programme for Research Excellence**, CUHK, 2017-2018

- **Overseas Research Attachment Programme**, Faculty of Engineering, CUHK, 2017-2018

- **Best-in-Session Presentation Award**, IEEE INFOCOM, 2017

- **Student Travel Grant**, IEEE Communications Society for attending IEEE INFOCOM, 2017

- **Best Student Presentation Award**, Network Communications and Economics Lab, CUHK, 2017

- **Hong Kong PhD Fellowship**, Hong Kong, 2014-2017

- **Outstanding Graduates Award** and **Best Undergraduate Thesis Award**, Sichuan University, 2014

- **Model Student Award** (top 30 students in the university), Sichuan University, 2012

- **National Scholarship** (ranking 1/328), China, 2011

Publications

- Journal Publications

  1. **M. Tang**, L. Gao, and J. Huang, "Communication, Computation, and Caching Resource Sharing for Internet-of-Things," *IEEE Communications Magazine*, vol. 58, no. 4, pp. 75-80, Apr. 2020.

2. **M. Tang**, L. Gao, and J. Huang, "Enabling Edge Cooperation in Tactile Internet via 3C Resource Sharing," *IEEE Journal on Selected Areas in Communications (JSAC)*, vol. 36, no. 11, pp. 2444-2454, Nov. 2018.

3. **M. Tang**, H. Pang, S. Wang, L. Gao, J. Huang, and L. Sun, "Multi-Dimensional Auction Mechanisms for Crowdsourced Mobile Video Streaming," *IEEE/ACM Transactions on Networking (ToN)*, vol. 26, no. 5, pp. 2062-2075, Oct. 2018.

4. L. Gao, **M. Tang**, H. Pang, J. Huang, and L. Sun, "Multi-User Cooperative Mobile Video Streaming: Performance Analysis and Online Mechanism Design," *IEEE Transactions on Mobile Computing (TMC)*, vol. 18, no. 2, pp. 376-389, Feb. 2018.

5. **M. Tang**, L. Gao, H. Pang, J. Huang and L. Sun, "Optimizations and Economics of Crowdsourced Mobile Streaming," *IEEE Communications Magazine*, vol. 55, no. 4, pp. 21 - 27, Apr. 2017.

6. **M. Tang** and Vincent W.S. Wong, "Online Bitrate Selection for Viewport Adaptive 360-Degree Video Streaming," *Transactions on Mobile Computing (TMC)*, under second round review (major revision).

7. **M. Tang** and Vincent W.S. Wong, "Deep Reinforcement Learning for Task Offloading in Mobile Edge Computing Systems," *Transactions on Mobile Computing (TMC)*, under second round review (major revision).

8. **M. Tang** and J. Huang, "How to Earn Money in Live Streaming Platforms? A Study of Donation-Based Markets," *IEEE/ACM Transactions on Networking (ToN)*, under first round revision (minor revision).

- Conference Publications

1. **M. Tang** and J. Huang, "How to Earn Money in Live Streaming Platforms?—A Study of Donation-Based Markets," *Proc. IEEE International Conference on Computer Communications (INFOCOM)*, Paris, France, Apr. 2019. (Acceptance rate: 19.7%)

2. **M. Tang**, S. Wang, L. Gao, J. Huang and L. Sun, "MOMD: A Multi-Object Multi-Dimensional Auction for Crowdsourced Mobile Video Streaming," *Proc. IEEE International Conference on Computer Communications (INFOCOM)*, Atlanta, GA, May 2017. (Acceptance rate: 20.9%)

3. **M. Tang**, L. Gao, and J. Huang, "A General Framework for Crowdsourcing Mobile Communication, Computation, and Caching," *Proc. IEEE Global Communications Conference (GLOBECOM)*, Singapore, Singapore, Dec. 2017.

4. **M. Tang**, L. Gao, H. Pang, J. Huang and L. Sun, "A Multi-Dimensional Auction Mechanism for Mobile Crowdsourced Video Streaming," *Proc. The International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless (WiOpt)*, Tempe, AZ, May, 2016.

5. L. Gao, **M. Tang**, H. Pang, J. Huang, and L. Sun, "Performance Bound Analysis for Crowdsourced Mobile Video Streaming," *Proc. Conference on Information Systems and Sciences (CISS)*, Princeton, NJ, Mar. 2016.

6. H. Pang, P. Wang, L. Gao, **M. Tang**, J. Huang and L. Sun, "Crowdsourced Mobility Prediction Based on Spatio-Temporal Contexts," *Proc. IEEE International Conference on Communications (ICC)*, Kuala Lumpur, Malaysia, May 2016.

Teaching

- **Guest Lecturer**, Dept. of Electrical and Computer Engineering, The University of British Columbia

    – EECE 571G Blockchain Software Engineering (Spring 2020): Game Theory Fundamentals

- **Teaching Assistant**, Dept. of Information Engineering, The Chinese University of Hong Kong

    – IERG5330 Network Economics (Fall 2016, Fall 2018)
    – ESTR3302 Networks: Technology, Economics, and Social Interactions (Spring 2016)

Academic Services

- **Technical Program Committee (TPC) Members**
    - IEEE International Conference on Communications (ICC)
    - IEEE Wireless Communications and Networking Conference (WCNC)
    - IEEE 5G World Forum (5GWF)
- **Technical Reviewers**
    - IEEE Transactions on Mobile Computing (TMC)
    - IEEE Transactions on Communications (TCOM)
    - IEEE Internet of Things Journal (IoT)
    - IEEE Journal on Selected Areas in Communications (JSAC)
    - Frontiers in Communications and Networks
    - IEEE International Conference on Computer Communications (INFOCOM)
    - IEEE Wireless Communications and Networking Conference (WCNC)
    - International Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt)
    - IEEE International Conference on Communications (ICC)

Leadership & Activities

- **Student Volunteer**, INFOCOM, April 2015
- **Vice President of Student Union**, Dept. of Electronics and Information Engineering, Sichuan University, 2011-2014
- **Member of Student Congress**, Sichuan University, 2014