

HULYA SEFEROGLU

Assistant Professor
Department of Electrical and Computer Engineering
University of Illinois at Chicago

CONTACT INFO

Email: hulya@uic.edu

Mail: Department of ECE (MC 154), 1037 SEO, 851 South Morgan Street, Chicago, IL, 60607

Web: <http://nrl.ece.uic.edu/>

RESEARCH INTERESTS

My research interests are in the broader area of networking: design, analysis, and implementation of network protocols and algorithms. I am particularly interested in edge computing, resilient networks, Device-to-Device (D2D) networking, network coding, wireless networks, and multimedia networking. My primary research goal is to design network architectures that are cost and energy efficient, scalable, secure, and to address increasing demand for bandwidth, quality, and reliable communications.

EDUCATION

University of California, Irvine (Sept. 2006-Dec. 2010)
Ph.D. in Electrical and Computer Engineering

Sabanci University, Istanbul, Turkey (Sept. 2003-June 2005)
M.S. in Electrical Engineering and Computer Science

Istanbul University, Istanbul, Turkey (Sept. 1999-June 2003)
B.S. in Electrical Engineering

WORK EXPERIENCE

Assistant Professor, University of Illinois at Chicago (Oct. 2013-present)
Department of Electrical and Computer Engineering
Department of Computer Science (courtesy appointment)

Postdoctoral Associate, Massachusetts Institute of Technology (Nov. 2011-Oct. 2013)
Laboratory for Information and Decision Systems & Department of Aeronautics and Astronautics

Postdoctoral Scholar, University of California, Irvine (Jan. 2011-Oct. 2011)
Electrical Engineering and Computer Science Department

Research Assistant, University of California, Irvine (Sept. 2006-Dec. 2010)
Electrical Engineering and Computer Science Department

Research Intern, AT&T Labs Research (Summer 2010)

Research Intern, Docomo USA Labs (Summer 2008)

PUBLICATIONS

Journal Papers

1. E. Koyuncu, M. Shabanighazikelayeh, and H. Seferoglu, "Deployment and Trajectory Optimization of UAVs: A Quantization Theory Approach," in *IEEE Transactions on Wireless Communications*, vol. 17(12), pp. 8531-8546, Dec. 2018.
2. Y. Keshtkarjahromi, H. Seferoglu, R. Ansari, A. Khokhar, "Device-to-Device Networking Meets Cellular via Network Coding," in *IEEE Transactions on Networking*, vol. 26(1), pp. 370-383, Feb. 2018.
3. Y. Keshtkarjahromi, H. Seferoglu, R. Ansari, A. Khokhar, "Content-Aware Network Coding over Device-to-Device Networks," in *IEEE Transactions on Mobile Computing*, vol. 16(8), pp. 2147-2158, Aug. 2017.
4. A. Le, L. Keller, B. Cici, H. Seferoglu, C. Fragouli, A. Markopoulou, "MicroCast: Cooperative Video Streaming Using Cellular and Local Connections," in *IEEE/ACM Transactions on Networking*, vol. 24(5), pp. 2983 – 2999, October 2016.
5. H. Seferoglu, E. Modiano, "TCP-Aware Backpressure Routing and Scheduling," in *IEEE Transactions on Mobile Computing*, vol. 15(7), pp. 1783 – 1796, July 2016.
6. H. Seferoglu, E. Modiano, "Separation of Routing and Scheduling in Backpressure-Based Wireless Networks," in *IEEE/ACM Transactions on Networking*, vol. 24(3), pp. 1787-1800, June 2016.
7. H. Seferoglu, A. Markopoulou, "Network Coding-Aware Queue Management for TCP Flows over Coded Wireless Networks," in *IEEE/ACM Transactions on Networking*, vol. 22(4), pp. 1297-1310, Aug. 2014.
8. H. Seferoglu, A. Markopoulou, U. C. Kozat, M. R. Civanlar, J. Kempf, "Dynamic FEC Algorithms for TFRC Flows," in *IEEE Transactions on Multimedia*, vol. 12(8), pp. 869-885, Dec. 2010.
9. H. Seferoglu, A. Markopoulou, "Video-Aware Opportunistic Network Coding over Wireless Networks," in *IEEE JSAC on Network Coding for Wireless Communication Networks*, vol. 27(5), pp. 713-728, June 2009.
10. H. Seferoglu, O. Gurbuz, O. Ercetin, Y. Altunbasak, "Rate Distortion-Based Real-Time Wireless Video Streaming," in *Elsevier Signal Processing: Image Communication*, vol. 22(6), pp. 529-542, July 2007.

Conference Papers

1. Y. Keshtkarjahromi, R. Bitar, V. Dasari, S. El Rouayheb, H. Seferoglu, "Secure Coded Cooperative Computation at the Heterogeneous Edge against Byzantine Attacks," in *IEEE Global Communications Conference (GLOBECOM)*, Waikoloa, HI, Dec. 2019.
2. S. Li, H. Seferoglu, D. Tuninetti, N. Devroye, "On the Stability Region of the Layered Packet Erasure Broadcast Channel with Output Feedback," in *IEEE Information Theory Workshop (ITW)*, Visby, Gotland, Sweden, Aug. 2019.
3. S. Zhou, M. S. Chaudhry, V. Gopalakrishnan, E. Halepovic, B. Vamanan, H. Seferoglu, "Managing Background Traffic in Cellular Networks," in *IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN)*, Paris, France, July 2019.
4. R. Bitar, Y. Xing, Y. Keshtkarjahromi, V. Dasari, S. El Rouayheb, H. Seferoglu, "PRAC: Private and Rateless Adaptive Coded Computation at the Edge," in *SPIE Defense + Commercial Sensing*, Baltimore, MD, April 2019.

5. Y. Keshtkarjahromi, H. Seferoglu, "Dynamic Heterogeneity-Aware Coded Cooperative Computation at the Edge," in *IEEE International Conference on Network Protocols (ICNP)*, Cambridge, UK, Sep. 2018, pp. 23-33. **(Acceptance rate is less than 18%.)**
6. Y. Xing, H. Seferoglu, "Predictive Edge Computing with Hard Deadlines," in *IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN)*, Washington, DC, June 2018, pp. 13-18.
7. M. Jahanian, Y. Xing, J. Chen, K. K. Ramakrishnan, H. Seferoglu, M. Yuksel, "The Evolving Nature of Disaster Management in the Internet and Social Media Era," in *IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN)*, Washington, DC, June 2018, pp. 79-84. **(Received the best demo award.)**
8. Z. Ovaisi, N. Devroye, H. Seferoglu, B. Smida, D. Tuninetti, "On Erasure Broadcast Channels with Hard Deadlines," in *IEEE International Conference on Communications (ICC) Workshop – 5G & Beyond – Enabling Technologies and Applications Focus on the Tactile Internet (5G TACNET)*, Kansas City, MO, May 2018, pp. 1-7.
9. D. Tuninetti, B. Smida, N. Devroye, H. Seferoglu, "Scheduling on Gaussian Broadcast Channel with Hard Deadlines," in *IEEE International Conference on Communications (ICC)*, Kansas City, MO, May 2018, pp. 1-7.
10. E. Koyuncu, R. Khodabakhsh, N. Surya, H. Seferoglu, "Deployment and Trajectory Optimization for UAVs: A Quantization Theory Approach," in *IEEE Wireless Communications and Networking Conference (WCNC)*, Barcelona, Spain, April 2018, pp. 1-6.
11. R. Khodabakhsh, H. Seferoglu, "AACT: Application-Aware Cooperative Time Allocation for Internet of Things," in *IEEE Global Communications Conference (GLOBECOM)*, Singapore, Dec. 2017, pp. 1-6.
12. Y. Xing, H. Seferoglu, "Device-Aware Routing and Scheduling in Multi-Hop Device-to-Device Networks," in *IEEE Information Theory and Applications (ITA) Workshop*, San Diego, CA, Feb. 2017, pp. 1-7. **(invited paper)**
13. Y. Keshtkarjahromi, H. Seferoglu, R. Ansari, A. Khokhar, "D2D Meets Cellular Using Network Coding," in *ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT) Student Workshop*, Irvine, CA, Dec. 2016.
14. S. Zhou, H. Seferoglu, "Connectivity-Aware Traffic Phase Scheduling for Heterogeneously Connected Vehicles," in *ACM International Workshop on Connected and Automated Vehicle Mobility (CarSys) as part of MobiCom*, New York, NY, Oct. 2016, pp. 44-51.
15. S. Zhou, H. Seferoglu, E. Koyuncu, "Blocking Avoidance in Wireless Networks," in *IEEE Information Theory and Applications (ITA) Workshop*, San Diego, CA, Feb. 2016, pp. 1-6. **(invited paper)**
16. A. Singh, Y. Xing, H. Seferoglu, "Energy-Aware Cooperative Computation in Mobile Devices," in *IEEE IFIP Networking*, Vienna, Austria, May 2016, pp. 368-376.
17. S. Zhou, H. Seferoglu, "Blocking Avoidance in Transportation Systems," in *IEEE Allerton Conference on Communication, Control, and Computing*, Allerton, IL, Sep. 2015, pp. 83-90.
18. Y. Keshtkarjahromi, H. Seferoglu, R. Ansari, A. Khokhar, "Network Coding for Cooperative Mobile Devices with Multiple Interfaces," in *IEEE Military Communications Conference (MILCOM)*, Tampa, FL, Oct. 2015, pp. 701-707.
19. Y. Keshtkarjahromi, H. Seferoglu, R. Ansari, A. Khokhar, "Content-Aware Instantly Decodable Network Coding over Wireless Networks," in *IEEE International Conference on Computing, Networking and Communications (ICNC)*, Anaheim, CA, Feb. 2015, pp. 803-809. **(Received the best poster award in N²WOMEN workshop 2014.)**
20. H. Seferoglu, Y. Xing, "Device-Centric Cooperation in Mobile Networks," in *IEEE International Conference on Cloud Networking (CloudNet)*, Luxembourg, Oct. 2014, pp. 217-222.
21. H. Seferoglu, E. Modiano, "TCP-Aware Backpressure Routing and Scheduling," in *IEEE Information Theory and Applications (ITA) Workshop*, San Diego, CA, Feb. 2014, pp. 1-9. **(invited paper)**
22. C. Meng, A. Markopoulou, H. Seferoglu, K. W. Shum, C. Chang, "Multicast Packing for Coding across Multiple Unicasts," in *IEEE International Symposium on Network Coding (NetCod)*, Calgary, Canada, June 2013, pp. 1-6.

23. H. Seferoglu, E. Modiano, "Diff-Max: Separation of Routing and Scheduling in Backpressure-Based Wireless Networks," in *IEEE International Conference on Computer Communications (INFOCOM)*, Turin, Italy, April 2013, pp. 1555-1563.
24. L. Keller, A. Le, B. Cici, H. Seferoglu, C. Fragouli, A. Markopoulou, "MicroCast: Cooperative Video Streaming on Smartphones," in *ACM Mobile Systems, Applications, and Services (MobiSys)*, Low Wood Bay, Lake District, UK, June 2012, pp. 57-70.
 - **Finalist for the best paper award.**
 - **Won the first place in the general category of the AMESE competition.**
25. H. Seferoglu, L. Keller, B. Cici, A. Le, A. Markopoulou, "Cooperative Video Streaming on Smartphones," in *IEEE Allerton Conference on Communication, Control, and Computing*, Allerton, IL, Sep. 2011, pp. 220-227. **(invited paper)**
26. H. Seferoglu, A. Markopoulou, M. Medard, "NCAPQ: Network Coding-Aware Priority Queuing for UDP Flows over COPE," in *IEEE International Symposium on Network Coding (NetCod)*, Beijing, China, July 2011, pp. 1-8.
27. H. Seferoglu, A. Markopoulou, K. K. Ramakrishnan, "I²NC: Intra- and Inter-Session Network Coding for Unicast Flows in Wireless Networks," in *IEEE International Conference on Computer Communications (INFOCOM)*, Shanghai, China, April 2011, pp. 1035-1043. **(Related news article appeared in AT&T Labs Research Magazine.)**
28. H. Seferoglu, A. Markopoulou, "Network Coding-Aware Queue Management for Unicast Flows over Coded Wireless Networks," in *IEEE International Symposium on Network Coding (NetCod)*, Toronto, Canada, June 2010, pp. 1-6.
29. H. Seferoglu, A. Markopoulou, "Delay-Optimized Network Coding for Video Streaming over Wireless Networks," in *IEEE International Conference on Communications (ICC)*, Cape Town, South Africa, May 2010, pp. 1-5.
30. H. Seferoglu, A. Markopoulou, U. C. Kozat, "Network Coding-Aware Rate Control and Scheduling in Wireless Networks," in *IEEE International Conference on Multimedia and Expo (ICME)*, New York, NY, June 2009, pp. 1496-1499.
31. H. Seferoglu, A. Markopoulou, "Distributed Rate Control for Video Streaming over Wireless Networks with Inter-Session Network Coding," in *IEEE Packet Video Workshop*, Seattle, WA, May 2009, pp. 1-10.
32. H. Seferoglu, U. C. Kozat, M. R. Civanlar, J. Kempf, "Congestion State-Based Dynamic FEC Algorithm for Media Friendly Transport Layer," in *IEEE Packet Video Workshop*, Seattle, WA, May 2009, pp. 1-10.
33. H. Seferoglu, A. Lakshimantha, A. Ganesh, P. Key, "Dynamic Decentralized Multi-Channel MAC Protocols," in *IEEE Information Theory and Application (ITA) Workshop*, San Diego, CA, Jan. 2008. **(invited paper)**
34. H. Seferoglu, A. Markopoulou, "Opportunistic Network Coding for Video Streaming over Wireless," in *IEEE Packet Video Workshop*, Lausanne, Switzerland, Nov. 2007, pp. 191-200.
35. H. Seferoglu, O. Gurbuz, O. Ercetin, Y. Altunbasak, "Video Streaming to Multiple Clients over Wireless Local Area Networks," in *IEEE International Conference on Image Processing (ICIP)*, Atlanta, GA, Oct. 2006, pp. 1681-1684.
36. H. Seferoglu, Y. Altunbasak, O. Gurbuz, O. Ercetin, "Rate Distortion Optimized Joint ARQ-FEC for Real-Time Wireless Multimedia," in *IEEE International Conference on Communications (ICC)*, Seoul, Korea, May 2005, pp. 1190-1194.

Posters/Misc. Publications

1. M. Jahanian, Y. Xing, J. Chen, KK Ramakrishnan, H. Seferoglu, H. Seferoglu, and M. Yuksel, "The Evolving Nature of Disaster Management in the Internet and Social Media Era," Demo and Poster Presentation in *IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN)*, Washington D.C., July 2018. **(Received the Best Demo Award)**
2. E. Koyuncu, M. Shabanighazikelayeh, H. Seferoglu, "Deployment and Trajectory Optimization of UAVs: A Quantization Theory Approach," Poster Presentation in *IEEE Communication Theory Workshop (CTW)*, Miramar Beach, FL, May 2018.

3. Y. Keshtkarjahromi, H. Seferoglu, R. Ansari, Ashfaq Khokhar, "Content-Aware Instantly Decodable Network Coding over Wireless Networks," Poster Presentation in *Networking Networking Women (N²Women) Workshop*, Chicago, IL, August, 2014. (**Received the Best Poster Award**).
4. L. Keller, A. Le, B. Cici, H. Seferoglu, C. Fragouli, A. Markopoulou, "Microcast: Cooperative Video Streaming on Smartphones (Demo and Poster)," in *IEEE Information Theory Workshop (ITW)* (Sep. 2012), *ACM International Conference on Mmobile Systems, Applications, and Services (MobiSys)* (June 2012), *ACM International Workshop on Mobile Computing Systems (HotMobile)* (Feb. 2012), *IEEE Information Theory and Applications (ITA) Workshop* (Feb. 2012).
5. H. Seferoglu, "Cross-Layer Optimization of Coded Wireless Networks (Poster)," in *IEEE Information Theory and Applications (ITA) Workshop*, San Diego, CA, Feb. 2011.
6. H. Seferoglu, A. Markopoulou, "Application-Aware Network Coding (Poster)," in *IEEE Information Theory and Applications (ITA) Workshop*, San Diego, CA, Feb. 2010.
7. A. Markopoulou, H. Seferoglu, "Network Coding Meets Multimedia: Opportunities and Challenges," in *IEEE Multimedia Communications Technical Committee (MMTC) E-Letter*, vol. 4(1), pp. 12-15, Feb. 2009.

Patents

1. M. S. Chaudhry, S. Zhou, S. Mathew, V. Gopalakrishnan, E. Halepovic, B. Vamanan, H. Seferoglu, "Agile Transport for Background Traffic in Cellular Networks," (filed) 60027.6043US01.
2. L. Keller, A. Le, B. Cici, H. Seferoglu, A. Markopoulou, C. Fragouli, "System and method for cooperative data streaming," US Patent App. 13/841,500.
3. H. Seferoglu, A. Markopoulou, K. K. Ramakrishnan, "Method and Apparatus to Utilize Network Coding in a Wireless Network," US 2013/0051377 A1.
4. H. Seferoglu, U. C. Kozat, M. R. Civanlar, J. Kempf, "Method and Apparatus for Reliable Media Transport," US 2010/0058147 A1.

FUNDING

Ongoing Awards

1. 09/01/19 – 08/31/21: Discovery Partners Institute (DPI) - UIC, total award is \$250,000 (H. Seferoglu's share is \$83,334), E. Koyuncu (PI) and H. Seferoglu, A. E. Cetin (Co-PIs), "Computationally Efficient Vehicle Control via Machine Learning".
2. 05/25/19 – 05/24/20: Seagate, total award to UIC is \$70,001 (H. Seferoglu's share is \$23,334), A. E. Cetin (PI) and E. Koyuncu, H. Seferoglu (Co-PIs), "Cooperative Implementation of Computationally Efficient GAN Neural Networks at the Edge".
3. 08/13/18 – 08/12/21: ARL, total award to UIC is \$900K (H. Seferoglu's share is \$489,000), H. Seferoglu (Project PI), "Constraints-Aware AC3: Adaptive Coded Cooperative Computation". In collaboration with S. El Rouayheb from Rutgers University.
4. 07/01/18 – 06/30/19: NSF, total award to UIC is \$20,000 (H. Seferoglu's share is \$20,000), H. Seferoglu (Project PI), "NSF Student Travel Grant for 2018 IEEE International Conference on Network Protocols (ICNP)".
5. 05/25/18 – 05/24/19: ARO, total award to UIC is \$62,244 (H. Seferoglu's share is \$62,244), H. Seferoglu (UIC PI), "Equipment for Secure Coded Cooperative Computation for Internet of Battlefield Things (IoBTs)". In collaboration with S. El Rouayheb from Rutgers University.
6. 07/15/18 – 06/30/22: NSF, total award to UIC is \$399,000 (H. Seferoglu's share is \$399,000), H. Seferoglu (UIC PI), "Secure Coded Cooperative Computation for Internet of Things". In collaboration with S. El Rouayheb and Jennifer (Yingying) Chen from Rutgers University.
7. 05/25/18 – 05/24/19: Seagate, total award to UIC is \$67,292 (H. Seferoglu's share is \$22,431),

- A. E. Cetin (PI) and E. Koyuncu, H. Seferoglu (Co-PIs), “Unusual Event Detection in Video Using Computationally Efficient Algorithms”.
8. 06/01/17 – 05/31/20: National Institute of Standards and Technology (NIST), total award to UIC is \$270,000 (H. Seferoglu’s share is \$270,000), H. Seferoglu (UIC PI), “Modeling and Development of Resilient Communication for First Responders in Disaster Management”. In collaboration with KK Ramakrishnan (project PI) from UC Riverside, M. Yuksel (Co-PI) from UCF, and J. Chen (Co-PI) from Rutgers.

Completed Awards

9. 09/18/17 – 09/17/18: Department of Defense (DoD), total award to UIC is \$598,318 (H. Seferoglu’s share is \$47,865), D. Erricolo (PI) and N. Devroye, M. Dutta, R. R. Alonso, A. Salim, H. Seferoglu, J. Shi, B. Smida, M. Soltanian, M. Stroschio, D. Tuninetti (Co-PIs), “Three birds with one stone: high-frequency instrumentation for semiconductor device characterization, radar and communication system measurements”.
10. 01/01/17 – 12/31/17: US Army Research Lab, total award to UIC is \$159,827 (H. Seferoglu’s share is \$159,827), H. Seferoglu (UIC PI), “Coded Cooperative Computation for Internet of Battlefield Things (IoBTs)”. In collaboration with S. El Rouayheb (project PI) from Rutgers.
11. 05/16/16 – 05/15/17: UIC College of Engineering Seed Fund, total award to UIC is \$30,000 (H. Seferoglu’s share is \$7,500), N. Devroye (PI) and H. Seferoglu, B. Smida, D. Tuninetti (Co-PIs), “On the Art of Communicating Highly Reliable Short Packets with Low Latency”.
12. 05/01/15 – 12/31/16: UIC College of Engineering Seed Fund, total award to UIC is \$35,000 (H. Seferoglu’s share is \$35,000), H. Seferoglu (PI), “Practical Network Control for Mobile Devices”.
13. 08/16/15 – 12/31/16: UIC College of Engineering Annual Fund, total award to UIC is \$24,407 (H. Seferoglu’s share is \$24,407), H. Seferoglu (PI), “Integrating Mobile Technologies in ECE Curriculum”.
14. 01/01/2015 – 12/31/16: Elizabeth Morse Genius Charitable Trust, total award to UIC is \$75,790 (H. Seferoglu’s share is \$18,947). R. Ansari (PI) and H. Seferoglu (Co-PI), “Algorithm Development for Assistive Technology for Blind Pedestrians to Cross Streets”.

TEACHING EXPERIENCE

1. ECE 436, Computer Communication Networks II, Spring 2019.
 - M.S. Students, Enrollment: 19, Completed Evaluations: 18, Overall Teaching Effectiveness: 4.28/5
 - Undergraduate and Exchange Students, Enrollment: 17, Completed Evaluations: 15, Overall Teaching Effectiveness: 4.27/5
2. ECE 533, Advanced Computer Communication Networks, Fall 2018.
Enrollment: 27, Completed Evaluations: 26, Overall Teaching Effectiveness: 4.81/5
3. ECE 436, Computer Communication Networks II, Spring 2018.
 - M.S. Students, Enrollment: 25, Completed Evaluations: 24, Overall Teaching Effectiveness: 4.17/5
 - Exchange Program, Enrollment: 19, Completed Evaluations: 8, Overall Teaching Effectiveness: 4.38/5
 - Undergraduate Students, Enrollment: 4, Completed Evaluations: 3, Overall Teaching Effectiveness: 4.33/5
4. ECE 436, Computer Communication Networks II, Spring 2017.

Enrollment: 51, Completed Evaluations: 49, Overall Teaching Effectiveness: 4.75/5 (I received a combined evaluation report. The enrollments are 34 M.S., 15 exchange program, and 2 undergrad students.)

5. ECE 533, Advanced Computer Communication Networks, Fall 2016.
Enrollment: 57, Completed Evaluations: 43, Overall Teaching Effectiveness: 4.49/5
6. ECE 436, Computer Communication Networks II, Spring 2016.
 - M.S. Students, Enrollment: 52, Completed Evaluations: 52, Overall Teaching Effectiveness: 4.13/5
 - Exchange Program, Enrollment: 14, Completed Evaluations: 13, Overall Teaching Effectiveness: 4.62/5
 - Undergraduate Students, Enrollment: 10, Completed Evaluations: 8, Overall Teaching Effectiveness: 3.88/5
7. ECE 533, Advanced Computer Communication Networks, Fall 2015.
Enrollment: 66, Completed Evaluations: 42, Overall Teaching Effectiveness: 4.17/5
8. ECE 436, Computer Communication Networks II, Spring 2015.
 - M.S. Students, Enrollment: 39, Completed Evaluations: 18, Overall Teaching Effectiveness: 4.39/5
 - Exchange Program, Enrollment: 15, Completed Evaluations: N/A, Overall Teaching Effectiveness: N/A
 - Undergraduate Students, Enrollment: 3, Completed Evaluations: 3, Overall Teaching Effectiveness: 3.33/5
9. ECE 533, Advanced Computer Communication Networks, Fall 2014.
Enrollment: 57, Completed Evaluations: 32, Overall Teaching Effectiveness: 4.19/5
10. ECE 436, Computer Communication Networks II, Spring 2014.
 - M.S. Students, Enrollment: 22, Completed Evaluations: 19, Overall Teaching Effectiveness: 4.26/5
 - Exchange Program, Enrollment: 21, Completed Evaluations: N/A, Overall Teaching Effectiveness: N/A
 - Undergraduate Students, Enrollment: 6, Completed Evaluations: N/A, Overall Teaching Effectiveness: N/A

ADVISING EXPERIENCE

Postdoctoral Fellows

1. Yasaman Keshkarjahromi, May 2018 – Aug. 2018.

Graduated Ph.D. Students – Primary Advisor

2. Yasaman Keshkarjahromi, completed her Ph.D. thesis on “Design and Optimization of Cooperative Wireless Networks,” May 2017. She was co-advised with R. Ansari and A. Khokhar. She is now with Seagate R&D.
3. Shanyu Zhou, completed his Ph.D. thesis on “Design and Optimization of Heterogenous Networks,” July 2019. He will join Qualcomm R&D in Fall 2019.

Current Ph.D. Students – Primary Advisor

4. Yuxuan Xing, passed the prelim exam in Spring 2018. His Ph.D. defense is planned for Fall 2019.
5. Pengzhen Li, started in Fall 2018.
6. Elahe Vedadi, started in Fall 2018.
7. Teng Li, starting in Fall 2019.
8. Omid Halimi, starting in Fall 2019.

Current Ph.D. Students – Joint Advisor

9. Usama Muneeb, started in Fall 2017. He has been co-advised with Profs. Koyuncu and Cetin.

Graduated M.S. Students

10. Zohreh Ovaisi, completed M.S. thesis on “On Erasure Broadcast Channels with Hard Deadlines,” July 2018. She has been co-advised with Profs. Devroye, Smida and Tuninetti.
11. Raheleh Khodabakhsh, completed M.S. thesis on “Application-Aware Cooperative Time Scheduling for Internet of Things,” Dec. 2017.
12. Ajita Singh, completed M.S. thesis on “Energy-Aware Computation in Mobile Devices” Dec. 2015.
13. Adeleke Oluwamayowa, completed M.S. thesis on “Software-Defined Network Overlays” May 2015.

Undergraduate Students

14. Teja Thangella, GPIP intern (freshman student), Summer 2017. Developed a multi-player game using Android-based devices and exploiting Wi-Fi Direct connections.
15. Jacob Scott, GPIP intern (freshman student), Summer 2017. Developed a multi-player game using Android-based devices and exploiting Wi-Fi Direct connections.
16. Pedro De La Torre, GPIP intern (freshman student), Summer 2016. He analyzed the impact of packet sizes on transmission performance of TCP connections.
17. Tadas Petraitis, GPIP intern (freshman student), Summer 2015. He developed multi-player games on Android-based mobile devices.
18. Kevin Ngo, GPIP intern (freshman student), Summer 2014. He developed client-server networking algorithm on Android-based mobile devices.

HONORS AND DISTINCTIONS

1. Best demo award in IEEE LANMAN (2018)
2. **UIC, College of Engineering, 2018 Research Award**
3. **UIC, College of Engineering, 2018 Teaching Award**
4. **UIC, College of Engineering, 2016 Advising Award**
5. CPCC Fellowship, University of California, Irvine (2006-2008)
6. Graduate Fellowship from Sabanci University (2003-2006)
7. Ranked 1st in the Electrical Engineering Department, Istanbul University (2003)

PROFESSIONAL and UIC ACTIVITIES

Editor

1. Associate Editor of IEEE/ACM Transactions on Networking (2017 – ongoing).

2. Executive Editor of Transactions on Emerging Telecommunications Technologies (2016 – 2019).
3. Guest Editor of EURASIP Journal on Advances in Signal Processing, Special Issue on Network Coding, 2015.

Conference and Workshop Organization

4. **General chair of IEEE International Conference on Network Protocols (ICNP), 2019. ICNP is a very competitive conference in the networking area, which will be held at UIC in October 2019.**
5. Publication Chair of IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN), 2019.
6. Travel Chair of IEEE International Conference on Network Protocols (ICNP), 2018.
7. Co-Chair of Student Workshop of ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT), 2016.
8. Co-Organizer of Chicago Shannon Centennial, 2016.

Technical Program Chair

9. ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT) Student Workshop, 2016.

Technical Program Committee Member

10. IEEE International Conference on Network Protocols (ICNP), 2017, 2018, 2019.
11. Wireless Telecommunications Symposium (WTS), 2017.
12. ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT) Student Workshop, 2016.
13. Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET) 2016.
14. IEEE Global Communications Conference (GLOBECOM), 2015.
15. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications, 2015, 2014.
16. IEEE International Conference on Computer Communications (INFOCOM) Workshop on Communication and Networking Techniques for Contemporary Video, 2014.
17. IEEE International Symposium on Network Coding (NetCod), 2012.
18. IEEE International Conference on Computer Communication Networks (ICCCN), 2011.
19. IEEE Consumer Communications & Networking Conference (CCNC), 2010.

Reviewer for Journals

1. IEEE/ACM Transactions on Networking
2. IEEE Transactions on Mobile Computing
3. IEEE Transactions on Information Theory
4. IEEE Transactions on Multimedia
5. IEEE Journal on Selected Areas in Communications (JSAC)
6. IEEE Network Magazine
7. IEEE Transactions on Wireless Communications
8. IEEE Transactions on Parallel and Distributed Systems
9. IEEE Transactions on Circuits and Systems for Video Technology
10. IEEE Transactions on Vehicular Technology
11. IEEE Communications Letters
12. IEEE Transactions on Communications
13. IEEE Sensors Journal

14. Journal of Communication Systems
15. Elsevier Information Sciences
16. Multimedia Systems

Reviewer for Conferences

1. IEEE International Symposium on Information Theory (ISIT) 2019, 2018, 2017, 2015, 2014, 2013, 2012, 2009.
2. Wireless Telecommunications Symposium (WTS), 2017.
3. ACM International Conference on Emerging Networking Experiments and Technologies (CoNEXT) Student Workshop, 2016.
4. Workshop on Resource Allocation, Cooperation and Competition in Wireless Networks (RAWNET) 2016.
5. IEEE Global Communications Conference (GLOBECOM), 2015, 2012, 2011, 2006.
6. ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc), 2014.
7. IEEE International Conference on Computer Communications (INFOCOM), 2014, 2013, 2012.
8. IEEE International Symposium on Network Coding (NetCod), 2013, 2012, 2009.
9. IEEE Vehicular Technology Conference (VTC), 2013.
10. International Conference on Wireless Communications and Signal Processing (WCSP), 2012.
11. IEEE International Conference on Multimedia and Expo (ICME), 2012.
12. IEEE International Conference on Computer Communication Networks (ICCCN), 2011.
13. IEEE International Symposium on Information Theory & Its Applications (ISITA), 2010.
14. IEEE Consumer Communications & Networking Conference (CCNC), 2010, 2009.
15. International Wireless Communications & Mobile Computing Conference (IWCMC), 2008.
16. IEEE International Conference on Communications (ICC), 2008.

Member

1. Invited member of Multimedia Processing for Communications Interest Group (MPCIG) of IEEE Communications Society Multimedia Communications Technical Community (2015-2016).
2. Women in Information Theory (WITHITS).
3. Networking Networking Women (N²WOMEN).

Outreach

1. Panelist in N²Women Meeting at ICNP 2018 on “Navigating the Path from a Novice to an Independent Researcher,” Sep. 2018.
2. Developed course modules for the 2017 Women in Engineering Summer program (WIESP) for female high school students, June-July, 2017.

INVITED TALKS

1. “Adaptive and Private Coded Computation at the Edge,” IEEE Information Theory and Applications (ITA) Workshop, San Diego, CA, Feb 2019.
2. “Dynamic Heterogeneity-Aware Cooperative Computation at the Edge,” Eurocom, Nov. 2018.
3. “Adaptive Heterogeneity-Aware Coded Cooperative Computation at the Edge,” Army Research Lab, Aberdeen, Sep. 2018.
4. “Dynamic Heterogeneity-Aware Cooperative Computation at the Edge,” Bilkent University, July 2018.

5. "Modeling and Development of Resilient Communication for First Responders in Disaster Management," Public Safety Broadband Stakeholder Meeting, San Diego, CA, June 2018. **(Related news article appeared in Urgent Communications Magazine.)**
6. "Robust and Resilient Communication and Computation at the Edge," University of New Mexico, Albuquerque, NM, April 2018.
7. "Robust and Resilient Communication and Computation at the Edge," Stevens Institute of Technology, Hoboken, NJ, April 2018.
8. "Coded Cooperative Computation for Internet of Things," IEEE Information Theory and Applications (ITA) Workshop, San Diego, CA, Feb. 2018.
9. "Coded Cooperative Computation for Augmented and Virtual Reality," NSF Visioning Workshop on Networked Virtual and Augmented Reality Communications, Washington, DC, April 2018.
10. "Cooperative Networking of Mobile Devices for Energy, Computation, and Throughput Efficiency," Technical University of Berlin, Jan. 2018.
11. "Cooperative Networking of Mobile Devices for Energy, Computation, and Throughput Efficiency," NSF Wi-FiUS PI Meeting, Helsinki, Finland, Aug. 2017.
12. "Cooperative Networking of Mobile Devices for Energy, Computation, and Throughput Efficiency," KTH Royal Institute of Technology in Stockholm, June 2017.
13. "Device-aware routing and scheduling in multi-hop device-to-device networks," IEEE Information Theory and Applications (ITA) Workshop, San Diego, CA, Feb. 2017.
14. "Cooperative Networking of Mobile Devices for Energy, Computation and Throughput Efficiency," Shannon Centennial in Chicago, Sep. 2016.
15. "Device-to-Device Networking: Computation, Energy, and Bandwidth," Northwestern University, Chicago, IL, April 2016.
16. "Device-to-Device Networking: Computation, Energy, and Bandwidth," Ruhr-University Bochum, Bochum, Germany, March 2016.
17. "Blocking Avoidance: From Wireless Networks to Transportation Systems," IEEE Information Theory and Applications (ITA) Workshop, San Diego, CA, Feb. 2016.
18. "Cooperative Resource Utilization and Multimedia-Awareness in D2D Networks," The Department of Computer Science, University of Illinois at Chicago (UIC), Sep. 2015.
19. "Network Coding for Cooperative Mobile Devices with Multiple Interfaces," Communication Theory Workshop (CTW), Orange County, CA, May 2015.
20. "Device-Centric Cooperation in Mobile Networks," ITA Workshop, San Diego, CA, Feb. 2015.
21. "Cooperative Networking of Mobile Devices for Video Streaming," Huawei, Rolling Meadows, IL, Jan. 2015.
22. "Practical Network Control for Wireless Networks," Illinois Institute of Technology, Chicago, IL, Feb. 2014.
23. "TCP-Aware Backpressure Routing and Scheduling," IEEE Information Theory and Applications (ITA) Workshop, San Diego, CA, Feb. 2014.
24. "Network Optimization: Bridging the Gap between Theory and Practice," University of Illinois at Chicago, IL, April 2013.
25. "Diff-Max: Separation of Routing and Scheduling in Backpressure-Based Wireless Networks," ITA Workshop, San Diego, CA, Feb. 2013.
26. "Network Optimization: Bridging the Gap between Theory and Practice," Arizona State University, Phoenix, AZ, Feb. 2013.
27. "Application-Aware Network Coding," Chinese University of Hong Kong, Hong Kong, April 2010.
28. "Improving the Performance of TCP over Coded Wireless Networks," Microsoft Research, Redmond, WA, March 2010.
29. "Improving the Performance of Unicast Flows over Coded Wireless Networks," Ozyegin University, Istanbul, Turkey, Jan. 2009.
30. "Congestion Control over Coded Networks," DMS Workshop in UCLA, Los Angeles, CA, Jan. 2009.
31. "Network Coding for Video," Microsoft Research, Redmond, WA, March 2008.

32. "Congestion State-Based FEC for Media Friendly Transport Layer," DoCoMo USA Labs, Palo Alto, CA, Aug. 2008.
33. "Dynamic Decentralized Multi-Channel MAC Protocols," Microsoft Research, Cambridge, UK, Aug. 2007.