

Ahmed Saeed (Ahmed Said Mohamed Tawfik Issa)

CONTACT INFORMATION	32 Vassar Street, 32-G930 Cambridge, MA 02139	asaeed@csail.mit.edu https://saeed.github.io
RESEARCH INTERESTS	Theory, design, and implementation of scalable computer networks and computer systems , including resource scheduling, congestion control, wireless networks, and cyber-physical systems.	
EDUCATION	Georgia Institute of Technology , Atlanta, Georgia, USA PhD in Computer Science August 2019 <ul style="list-style-type: none"><i>Dissertation</i>: Scalable Network Scheduling in Software<i>Advisors</i>: Mostafa Ammar and Ellen W. Zegura Georgia Institute of Technology , Atlanta, Georgia, USA Master's of Science in Computer Science May 2018 Alexandria University , Alexandria, Egypt Bachelor's of Science, Computer and Systems Engineering July 2010	
RESEARCH EXPERIENCE	Massachusetts Institute of Technology , Cambridge, Massachusetts, USA <i>Postdoctoral Associate</i> Mentor: Mohammad Alizadeh Sep. 2019 - now Google Inc. , Sunnyvale and Mountain View, CA, USA. <i>Student Researcher</i> Host: Nandita Dukkupati Aug. 2018 - Dec. 2018 <i>Software Engineering Intern</i> Host: Nandita Dukkupati May 2018 - Aug. 2018 <i>Software Engineering Intern</i> Host: Nandita Dukkupati May 2016 - Jan. 2017 Carnegie Mellon University Qatar and Qatar University , Doha, Qatar. <i>Research Fellow</i> Mentors: Khaled Harras and Amr Mohammad Nov. 2013 - July 2014 Egypt-Japan University for Science and Technology , Alexandria, Egypt <i>Research Assistant</i> Mentors: Moustafa Youssef and Khaled Harras July 2010 - Aug. 2013	
HONORS AND AWARDS	Google PhD Fellowship in Systems and Networking (2017-2019). Third place in Student Research Competition (SRC) at MobiCom 2011. Second place in undergraduate Student Research Competition (SRC) at MobiCom 2009. Travel grants to attend: MobiSys'17, ICC'13, and PerCom'12.	
CONFERENCE PUBLICATIONS	<ol style="list-style-type: none">Scouting the Path to a Million-Client Server PAM 2021 Yimeng Zhao, <i>Ahmed Saeed</i>, Ellen Zegura, Mostafa AmmarAnnulus: A Dual Congestion Control Loop for Datacenter and WAN Traffic Aggregates ACM SIGCOMM 2020 <i>Ahmed Saeed</i>, Varun Gupta, Prateesh Goyal, Milad Sharif, Rong Pan, Mostafa Ammar, Ellen Zegura, Keon Jang, Mohammad Alizadeh, Abdul Kabbani, Amin VahdatOverload Control for μs-scale RPCs with Breakwater USENIX OSDI 2020 Inho Cho, <i>Ahmed Saeed</i>, Joshua Fried, Seo Jin Park, Mohammad Alizadeh, Adam BelayEiffel: Efficient and Flexible Software Packet Scheduling USENIX NSDI 2019 <i>Ahmed Saeed</i>, Yimeng Zhao, Nandita Dukkupati, Ellen Zegura, Mostafa Ammar, Khaled Harras, Amin Vahdat	

5. **zD: A Scalable Zero-Drop Network Stack at End Hosts**
ACM CoNEXT2019
Yimeng Zhao, Ahmed Saeed, Ellen Zegura, Mostafa Ammar
6. **Unison: Enabling Content Provider/ISP Collaboration using a vSwitch Abstraction**
IEEE ICNP 2019
Yimeng Zhao, Ahmed Saeed, Mostafa Ammar, Ellen Zegura
7. **Characterizing the Effects of Rapid LTE Deployment: A Data Driven Analysis**
IEEE/IFIP TMA 2019
Kareem Abdullah, Noha Othman Korany, Ayman Khalafallah, Ahmed Saeed, Ayman Gaber
8. **If you can't beat them, augment them: Improving Local WiFi with Only Above-driver Changes**
IEEE ICNP 2018
Ahmed Saeed, Mostafa Ammar, Ellen Zegura, Khaled Harras
9. **Carousel: Scalable Traffic Shaping at End-Hosts**
ACM SIGCOMM 2017
Ahmed Saeed, Nandita Dukkkipati, Vytautas Valancius, Vinh The Lam, Carlo Contavalli, Amin Vahdat
10. **Local and Low-cost White Space Detection**
IEEE ICDCS 2017
Ahmed Saeed, Khaled Harras, Ellen Zegura, Mostafa Ammar
11. **Argus: Realistic Target Coverage by Drones**
ACM/IEEE IPSN 2017
Ahmed Saeed, Ahmed Abdelkader, Mouhyemen Khan, Azin Neishaboori, Khaled Harras, Amr Mohamed
– Full version published in ACM Transactions on Sensor Networks 2019
12. **The Inapproximability of Illuminating Polygons by α -Floodlights**
CCCG 2015
Ahmed Abdelkader, Ahmed Saeed, Khaled Harras, Amr Mohamed
13. **Up and Away: A Visually-Controlled Easy-to-Deploy Wireless UAV Cyber-Physical Testbed**
IEEE WiMob 2014
Ahmed Saeed, Azin Neishaboori, Khaled Harras, Amr Mohamed
14. **Low complexity target coverage heuristics using mobile cameras (*short paper*)**
IEEE MASS 2014
Azin Neishaboori, Ahmed Saeed, Khaled Harras, Amr Mohamed
15. **On Target Coverage in Mobile Visual Sensor Networks**
ACM MOBIWAC 2014
Azin Neishaboori, Ahmed Saeed, Khaled Harras, Amr Mohamed
16. **Location-Aware Probabilistic Route Discovery for Cognitive Radio Networks**
IEEE WCNC 2014
Ahmed Elbagori, Ahmed Saeed, Moustafa Youssef
17. **A Low-Cost Large-Scale Framework for Cognitive Radio Routing Protocols Testing**
IEEE ICC 2013
Ahmed Saeed, Mohamed Ibrahim, Khaled Harras, Moustafa Youssef
18. **RASID: A Robust WLAN Device-free Passive Motion Detection System**
IEEE PerCom 2012
Ahmed E. Kosba, Ahmed Saeed, Moustafa Youssef
– Full version published in IEEE Journal of Selected Topics in Signal Processing 2014

JOURNAL PUBLICATIONS	<ol style="list-style-type: none"> 1. On Realistic Target Coverage by Autonomous Drones ACM Transactions on Sensor Networks 2019 <i>Ahmed Saeed</i>, Ahmed Abdelkader, Mouhyemen Khan, Azin Neishaboori, Khaled Harras, Amr Mohamed 2. Toward Dynamic Real-time Geo-location Databases for TV white Spaces IEEE Network 2015 <i>Ahmed Saeed</i>, Mohamed Ibrahim, Khaled Harras, Moustafa Youssef 3. Ichnaea: A Low-overhead Robust WLAN Device-free Passive Localization System IEEE Journal of Selected Topics in Signal Processing 2014 <i>Ahmed Saeed</i>, Ahmed E. Kosba, Moustafa Youssef 4. Nuzzer: A Large-Scale Device-Free Passive Localization System for Wireless Environments IEEE Transactions on Mobile Computing 2013 Moustafa Seifeldin, <i>Ahmed Saeed</i>, Ahmed E. Kosba, Moustafa Youssef, Amr El-Keyi
WORKSHOP PUBLICATIONS	<ol style="list-style-type: none"> 1. Vision: The Case for Symbiosis in the Internet of Things ACM MCS 2015 in conjunction with ACM MobiCom <i>Ahmed Saeed</i>, Mostafa Ammar, Khaled Harras, Ellen Zegura 2. Towards a Characterization of White Spaces Databases Errors: An Empirical Study ACM WiNTECH 2014 in conjunction with ACM MobiCom <i>Ahmed Saeed</i>, Khaled Harras, Moustafa Youssef 3. Target Coverage Heuristics Using Mobile Cameras Robotic Sensor Networks 2014 part of Cyber-Physical Systems Week Azin Neishaboori, <i>Ahmed Saeed</i>, Amr Mohamed, Khaled Harras
REFEREED POSTERS	<ol style="list-style-type: none"> 1. A Robust Technique for WLAN Device-free Passive Motion Detection ACM MobiCom 2011 Ahmed E. Kosba, <i>Ahmed Saeed</i>, Moustafa Youssef 2. Quantifying the Impact of GPU Specific Optimizations: An Experimental Study on a Weather Forecasting Application ACM PACT 2010 <i>Ahmed Saeed</i>, Emad Elwany, Emad Tawadros, Kareem Abdelsalam, Pakinam Yousry, Samia Hafez 3. DNIS: A Middleware for Dynamic Multiple Network Interface Scheduling ACM MobiCom 2009 <i>Ahmed Saeed</i>, Karim Habak, Mahmoud Fouad, Moustafa Youssef
RESEARCH DEMOS	DNIS: Dynamic Multiple Network Interface Scheduler ACM MobiCom 2009 <i>Ahmed Saeed</i> , Karim Habak, Mahmoud Fouad, Moustafa Youssef
PATENTS	US Patent 10,454,835 “Device And Method For Scalable Traffic Shaping With A Time-Indexed Data Structure” Carlo Contavalli, Nandita Dukkipati, <i>Ahmed Issa</i> , Vytautas Valancius, Granted Oct. 2019. US Patent 9,800,946 “Dynamic real-time TV white space awareness” Khaled Harras, Moustafa Amin Youssef, Mohammed Ibrahim, <i>Ahmed Issa</i> , Granted Oct. 2017.
TEACHING EXPERIENCE	Massachusetts Institute of Technology, <i>Guest Lecturer on Evolution of Internet Routing</i> Computer Networks (6.829) Fall 2019

Georgia Institute of Technology,

Guest Lecturer on Congestion Control in Datacenters
Advanced Computer Networks (CS 6250)

Spring 2017, Fall 2017

Teaching Assistant

Advanced Computer Networks (CS 6250)
Introduction to Computer Networks (CS 8803)

Fall 2015, Spring 2017

Alexandria University, Alexandria, Egypt

Teaching Assistant/Demonstrator

Introduction to Computers and Programming
Programming in C
Systems Programming

Fall 2010

**MENTORSHIP
EXPERIENCE****Current Mentees:**

- Inho Cho (PhD - MIT) Summer 2019 - Present
Project: *Overload control for μ s-scale RPCs* (OSDI '20 [2])
- Arjun Balasingam (PhD - MIT) Fall 2019 - Present
Project: *Resource scheduling in mobility platforms*
- Venkat Arun (PhD - MIT) Summer 2020 - Present
Project: *Formalizing Internet congestion control*

Former Mentees:

- Yimeng Zhao (PhD - Georgia Tech) Fall 2017 - Summer 2020
Project: *Zero-drop network stack at end hosts* (CoNEXT '19 [4])
Current position: Software Engineer at Facebook
- Kareem Abdallah (MSc - Alexandria University) Spring 2017 - Spring 2019
Project: *Characterizing the Effects of Rapid LTE Deployments* (TMA '19 [6])
Current position: Data Science Manager at Ericsson
- Esther Showalter (PhD - UCSB) Summer 2018
Project: *Wardriving for TVWS spectrum sensing*
- Raghavendra Murali (MSc - Georgia Tech) Spring 2017 - Fall 2017
Project: *Caching in cellular networks*
Current position: Senior Software Engineer at Qualcomm
- Mouhyemen Khan (Undergraduate - CMU-Qatar) Spring 2016 - Fall 2016
Project: *Surveillance with autonomous drones* (IPSN '17 [10])
Current position: PhD Student at Georgia Tech

SERVICE**Invited Reviewer**

- IEEE/ACM Transactions on Networking (ToN), IEEE Journal on Selected Areas in Communications (JSAC), IEEE Transactions on Vehicular Technology (TVT), IEEE Transactions on Mobile Computing (TMC), IEEE Computer, ACM Transactions on Sensor Networks (TOSN), Elsevier Pervasive and Mobile Computing, Elsevier Ad Hoc Networks, Elsevier Computer Networks, IEEE VTC2015-Spring

Leadership roles

- Vice President of Graduate Student Council for College of Computing at Georgia Tech (2015-2016).
- Senator at Graduate Student Senate of the Graduate Student Government Association (2015-2016).
- Team Leader of *the first* Software Freedom Day @ Alexandria University with 600+ attendees (2009).
- Class Representative of Computer Science Class 2010, Alexandria University (2006-2007).

TALKS

- **Annulus: A Dual Congestion Control Loop for Datacenter and WAN Traffic Aggregates**
Conference of the ACM Special Interest Group on Data Communication (SIGCOMM) Aug. 2020
- **Scalable Packet Scheduling in Software**
 - MIT Feb. 2019
 - Princeton Feb. 2019
 - USC Oct. 2018
 - CMPE280N Seminar on Networks, UCSC Oct. 2018
- **Eiffel: Efficient and Flexible Software Packet Scheduling**
USENIX Symposium on Networked Systems Design and Implementation (NSDI) Feb. 2019
- **Carousel: Scalable Traffic Shaping at End-Hosts**
Conference of the ACM Special Interest Group on Data Communication (SIGCOMM) Aug. 2017
- **Local and Low-cost White Space Detection**
 - Conference on Distributed Computing Systems (ICDCS) Jun. 2017
 - Marconi Society Young Scholars Symposium with Vint Cerf Mar. 2015
- **Argus: Realistic Target Coverage by Drones**
Conference on Information Processing in Sensor Networks (IPSN) Apr. 2017
- **RASID: A Robust WLAN Device-free Passive Motion Detection System**
Conference on Pervasive Computing and Communications (PerCom) Mar. 2012
- **DNIS: A Middleware for Dynamic Multiple Network Interface Scheduling**
Student Research Competition at MobiCom Sep. 2009