

Ahmed Saeed (a.k.a. Ahmed Said Mohamed Tawfik Issa)

CONTACT INFORMATION	KACB 3338, 266 Ferst Dr NW Atlanta, GA 30332	asaeed@cc.gatech.edu https://faculty.cc.gatech.edu/~amsmti3/
RESEARCH INTERESTS	Theory, design, and implementation of scalable computer networks and computer systems , including resource scheduling, congestion control, and formal methods.	
EDUCATION	Georgia Institute of Technology , Atlanta, Georgia, USA	
	PhD in Computer Science	August 2019
	Georgia Institute of Technology , Atlanta, Georgia, USA	
	M.Sc. in Computer Science	May 2018
	Alexandria University , Alexandria, Egypt	
	Bachelor's of Science, Computer and Systems Engineering	July 2010
EMPLOYMENT	Georgia Institute of Technology , Atlanta, Georgia, USA	
	<i>Assistant Professor</i>	Aug. 2021 - now
	Massachusetts Institute of Technology , Cambridge, Massachusetts, USA	
	<i>Postdoctoral Associate</i>	Sep. 2019 - Jul. 2021
	Google Inc. , Sunnyvale and Mountain View, CA, USA.	
	<i>Student Researcher</i>	Aug. 2018 - Dec. 2018
	<i>Software Engineering Intern</i>	May 2018 - Aug. 2018
	<i>Software Engineering Intern</i>	May 2016 - Jan. 2017
	<i>Software Engineering Intern</i>	May 2015 - Aug. 2015
	Carnegie Mellon University Qatar and Qatar University , Doha, Qatar.	
	<i>Research Fellow</i>	Nov. 2013 - July 2014
	Egypt-Japan University for Science and Technology , Alexandria, Egypt	
	<i>Research Assistant</i>	July 2010 - Aug. 2013
HONORS AND AWARDS	Nile University , Cairo, Egypt	
	<i>Undergraduate Research Assistant</i>	July 2009 - Aug. 2009
	DARPA Riser, 2022.	
	Selected among the top five DARPA Risers at the Georgia Tech event.	
	Presented at DARPA Demo Day 2023 at the Pentagon.	
	First place in undergraduate Student Research Competition (SRC) at SIGCOMM 2023.	
	Class of 1969 Teaching Fellow, 2022.	
	Inclusive STEM Teaching Fellow, 2022.	
	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.	

FUNDING

- **Collaborative Research: CNS Core: Medium: High-performance Network Stacks for the Edge**, NSF award CNS-2212098
PI with Alex Daglis and Adam Belay (MIT), \$1,198,140 (Georgia Tech: \$748,140) 10/2022-09/2025.
- **Collaborative Research: CNS Core: Medium: Robust Behavioral Analysis and Synthesis of Network Control Protocols Using Formal Verification**, NSF award CNS-2212103
Co-PI with Hari Balakrishnan (MIT), \$1,199,020 (Georgia Tech: \$299,020) 10/2022-09/2025.
- **From Design to Print: An Analytical Study of Circuit Synthesis from Nanomodular Electronics**, Speculative Technologies
PI with Alex Daglis, Unrestricted gift, \$40,000, 08/2023
- **Google Research Award**
Unrestricted gift, \$60,000, 06/2022

CONFERENCE PUBLICATIONS

1. **LDB: An Efficient Latency Profiling Tool for Multithreaded Applications**
USENIX NSDI 2024
Inho Cho, Seo Jin Park, Ahmed Saeed, Adam Belay, Mohammad Alizadeh
2. **Protego: Overload Control for Applications with Unpredictable Lock Contention**
USENIX NSDI 2023
Inho Cho, Ahmed Saeed, Seo Jin Park, Mohammad Alizadeh, Adam Belay
3. **A Characterization of Route Variability in LEO Satellite Networks**
PAM 2023
Vaibhav Bhosale, Ahmed Saeed, Ketan Bhardwaj, Ada Gavrilovska
4. **Toward Formally Verifying Congestion Control Behavior**
ACM SIGCOMM 2021
Venkat Arun, Mina Tahmasbi Arashloo, Ahmed Saeed, Mohammad Alizadeh, Hari Balakrishnan
5. **Throughput-Fairness Tradeoffs in Mobility Platforms**
ACM MobiSys 2021
Arjun Balasingam, Karthik Gopalakrishnan, Radhika Mittal, Venkat Arun, Ahmed Saeed, Mohammad Alizadeh, Hamsa Balakrishnan, Hari Balakrishnan
6. **Scouting the Path to a Million-Client Server**
PAM 2021
Yimeng Zhao, Ahmed Saeed, Ellen Zegura, Mostafa Ammar
7. **Annulus: A Dual Congestion Control Loop for Datacenter and WAN Traffic Aggregates**
ACM SIGCOMM 2020
Ahmed Saeed, Varun Gupta, Prateesh Goyal, Milad Sharif, Rong Pan, Mostafa Ammar, Ellen Zegura, Keon Jang, Mohammad Alizadeh, Abdul Kabbani, Amin Vahdat
8. **Overload Control for μ s-scale RPCs with Breakwater**
USENIX OSDI 2020
Inho Cho, Ahmed Saeed, Joshua Fried, Seo Jin Park, Mohammad Alizadeh, Adam Belay
9. **Eiffel: Efficient and Flexible Software Packet Scheduling**
USENIX NSDI 2019
Ahmed Saeed, Yimeng Zhao, Nandita Dukkipati, Ellen Zegura, Mostafa Ammar, Khaled Haras, Amin Vahdat
10. **zD: A Scalable Zero-Drop Network Stack at End Hosts**
ACM CoNEXT2019
Yimeng Zhao, Ahmed Saeed, Ellen Zegura, Mostafa Ammar

11. **Unison: Enabling Content Provider/ISP Collaboration using a vSwitch Abstraction**
IEEE ICNP 2019
Yimeng Zhao, Ahmed Saeed, Mostafa Ammar, Ellen Zegura
12. **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
13. **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
14. **Carousel: Scalable Traffic Shaping at End-Hosts**
ACM SIGCOMM 2017
Ahmed Saeed, Nandita Dukkipati, Vytas Valancius, Vinh The Lam, Carlo Contavalli, Amin Vahdat
15. **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
16. **Local and Low-cost White Space Detection**
IEEE ICDCS 2017
Ahmed Saeed, Khaled Harras, Ellen Zegura, Mostafa Ammar
17. **The Inapproximability of Illuminating Polygons by α -Floodlights**
CCCG 2015
Ahmed Abdelkader, Ahmed Saeed, Khaled Harras, Amr Mohamed
18. **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
19. **Low complexity target coverage heuristics using mobile cameras (*short paper*)**
IEEE MASS 2014
Azin Neishaboori, Ahmed Saeed, Khaled Harras, Amr Mohamed
20. **On Target Coverage in Mobile Visual Sensor Networks**
ACM MOBIWAC 2014
Azin Neishaboori, Ahmed Saeed, Khaled Harras, Amr Mohamed
21. **Location-Aware Probabilistic Route Discovery for Cognitive Radio Networks**
IEEE WCNC 2014
Ahmed Elbagori, Ahmed Saeed, Moustafa Youssef
22. **A Low-Cost Large-Scale Framework for Cognitive Radio Routing Protocols Testing**
IEEE ICC 2013
Ahmed Saeed, Mohamed Ibrahim, Khaled Harras, Moustafa Youssef
23. **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

1. **On Realistic Target Coverage by Autonomous Drones**
ACM Transactions on Sensor Networks 2019
Ahmed Saeed, 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
Ahmed Saeed, 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
Ahmed Saeed, 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, Ahmed Saeed, Ahmed E. Kosba, Moustafa Youssef, Amr El-Keyi

WORKSHOP
PUBLICATIONS

1. **Astrolabe: Modeling RTT Variability in LEO Networks**
LEO-NET 2023 in conjunction with ACM MobiCom
Vaibhav Bhosale, Ketan Bhardwaj, Ahmed Saeed
2. **Vision: The Case for Symbiosis in the Internet of Things**
ACM MCS 2015 in conjunction with ACM MobiCom
Ahmed Saeed, Mostafa Ammar, Khaled Harras, Ellen Zegura
3. **Towards a Characterization of White Spaces Databases Errors: An Empirical Study**
ACM WINTech 2014 in conjunction with ACM MobiCom
Ahmed Saeed, Khaled Harras, Moustafa Youssef
4. **Target Coverage Heuristics Using Mobile Cameras**
Robotic Sensor Networks 2014 part of Cyber-Physical Systems Week
Azin Neishaboori, Ahmed Saeed, Amr Mohamed, Khaled Harras

REFEREED
POSTERS AND
DEMOS

1. **Understanding Interactions between Overload Control Core Allocation in Low-Latency Network Stacks**
ACM SIGCOMM 2023 (Poster)
Eric Stuhr, Ahmed Saeed
2. **A Robust Technique for WLAN Device-free Passive Motion Detection**
ACM MobiCom 2011 (Poster)
Ahmed E. Kosba, Ahmed Saeed, Moustafa Youssef
3. **Quantifying the Impact of GPU Specific Optimizations: An Experimental Study on a Weather Forecasting Application**
ACM PACT 2010 (Poster)
Ahmed Saeed, Emad Elwany, Emad Tawadros, Kareem Abdelsalam, Pakinam Yousry, Samia Hafez
4. **DNIS: A Middleware for Dynamic Multiple Network Interface Scheduling**
ACM MobiCom 2009 (Poster)
Ahmed Saeed, Karim Habak, Mahmoud Fouad, Moustafa Youssef
5. **DNIS: Dynamic Multiple Network Interface Scheduler**
ACM MobiCom 2009 (Demo)
Ahmed Saeed, Karim Habak, Mahmoud Fouad, Moustafa Youssef

PATENTS

1. US Patent 10,454,835
“Device And Method For Scalable Traffic Shaping With A Time-Indexed Data Structure”
Carlo Contavalli, Nandita Dukkkipati, Ahmed Issa, Vytautas Valancius, Granted Oct. 2019.
2. US Patent 9,800,946
“Dynamic real-time TV white space awareness”
Khaled Harras, Moustafa Amin Youssef, Mohammed Ibrahim, Ahmed Issa, Granted Oct. 2017.

SERVICE

PC Member: CoNEXT '24, INFOCOM '24, NSDI '23, LEO-NET '23, ANRW '23, SIGCOMM '22, HotNets '22, ANRW '22, APNet '22, ANCS '21

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, IEEE Networking Letters, ACM Transactions on Sensor Networks (TOSN), Elsevier Pervasive and Mobile Computing, Elsevier Ad Hoc Networks, Elsevier Computer Networks, IEEE VTC2015-Spring.

Georgia Tech Service

- Member, CoC Communications Faculty Advisory Board, 2022-2024.
- Member, PhD Visit Day Committee, 2022-2024.
- Member, PhD Admissions Committee, 2022.

TALKS

- **Fantastic Congestion Points and Where to Find Them**
Texas Tech University Mar. 2023
- **Improving the Performance and Resilience of LEO Satellite Networks**
DARPA Forward at Georgia Tech Oct. 2022
- **High Performance Network Stacks for Edge Servers**
Google Networking Research Summit 2022 Feb. 2022
- **Building Scalable Network Stacks for Modern Applications**
University of Texas at Austin Apr. 2021
École Polytechnique Fédérale de Lausanne (EPFL) Apr. 2021
University of Toronto Mar. 2021
Microsoft Research Mar. 2021
Imperial College London Mar. 2021
George Mason University Mar. 2021
Simon Fraser University Mar. 2021
University of British Columbia Mar. 2021
Virginia Tech Feb. 2021
University of Waterloo Feb. 2021
Max Planck Institute - SWS Feb. 2021
Georgia Tech Feb. 2021
King Abdullah University of Science and Technology (KAUST) Jan. 2021
- **Annulus: A Dual Congestion Control Loop for Datacenter and WAN Traffic Aggregates**
ACM SIGCOMM Conference Aug. 2020
- **Eiffel: Efficient and Flexible Software Packet Scheduling**
USENIX Symposium on Networked Systems Design and Implementation (NSDI) Feb. 2019

- **Scalable Packet Scheduling in Software**

Massachusetts Institute of Technology
Princeton University
University of Southern California
University of California - Santa Cruz

Feb. 2019
Feb. 2019
Oct. 2018
Oct. 2018

- **Carousel: Scalable Traffic Shaping at End-Hosts**

ACM SIGCOMM Conference

Aug. 2017

- **Local and Low-cost White Space Detection**

Conference on Distributed Computing Systems (ICDCS)
Marconi Society Young Scholars Symposium with Vint Cerf

Jun. 2017
Mar. 2015