

Assistant Professor  
College of Computing and Informatics  
Department of Computer Engineering  
University of Sharjah, Sharjah, UAE

+971-54377-4739  
[aaltaweel@sharjah.ac.ae](mailto:aaltaweel@sharjah.ac.ae)  
[[Google scholar](#)]

## Research Interests

---

Cyber security; Wireless networks and computer security; distributed systems; edge computing

## Education

---

- **Texas A&M University, College Station, TX, USA**  
PhD, Computer Engineering, Jan2013 to Dec2018 (Dissertation Defense)  
**Advisor:** [Prof. Radu Stoleru](#)  
**Advisory Committee:** [Prof. Guofei Gu](#), [Prof. I-Hong Hou](#), [Prof. Jyh-Charn \(Steve\) Liu](#)  
**Dissertation:** [On Securing Wi-Fi Direct Based Opportunistic Networks](#)
- **University of Stuttgart, Stuttgart, Germany**  
M.S., Information Technology, Sep2007 to Jul2009  
**Advisor:** [Prof. Kurt Rothermel](#)  
**Thesis:** [Providing basic security mechanisms in a Publish/Subscribe system](#)
- **Jordan University of Science and Technology, Irbid, Jordan**  
Bachelor of Science, Computer Engineering, Sep2001 to Jul2006  
**Graduation Project Advisor:** Prof. Basheer Al-Duwairi  
**Thesis:** IP trace back algorithms against Denial-of-Service attacks in computer networks

## Honors, Awards

---

- **Junior Researcher Travel Grant;** June 2019; International; the IEEE Conference on Communications and Network Security (CNS'19), Washington, D.C., USA  
- \$ 1,250 to cover the travel costs
- **Academy for Future Faculty Fellow Certificate;** Spring 2018; Academic; Center for the Integration of Research, Teaching and Learning (CIRTL), Texas A&M University, College Station, TX, USA  
- Attend eight seminars on how to build and enhance teaching skills for instructors. Topics of some seminars: learning outcomes and course development cycle, creating a syllabus, motivating teaching strategies
- **Graduate Teaching Academy Fellowship;** Spring 2018; International; Academic; Department of Computer Science and Engineering, Texas A&M University, College Station, TX, USA  
- Selected as primary instructor for CSCE 464: Wireless and Mobile Systems course  
- College-wide competition and a committee of department heads and faculty members reviewed all applications and made final recommendations  
- Monthly stipend (i.e., half time salary) for 4.5 months and tuition for Spring 2018
- **King Abdullah University of Science and Technology (KAUST)'s Fellowship;** 2011-2015; International; Academic; KAUST, KSA  
- \$75 K per year: monthly stipends plus tuition and fees for the first four years of PhD study (declined)
- **Royal Academic Sponsorship;** 2001-2006; National; Academic; Jordan University of Science and Technology, Irbid, Jordan  
- \$1,700 plus tuition and fees for the duration of B.Sc. studies
- **Outstanding Student Award;** 2000; National; Academic; Irbid Secondary School, Irbid, Jordan  
- The award includes an honorarium and is based on the academic performance at the school

## Publications

---

### • Refereed Conferences

1. Ala Altaweel, Radu Stoleru, Guofei Gu, and Arnab Kumar Maity “CollusiveHijack: A New Route Hijacking Attack and Countermeasures in Opportunistic Networks.” The IEEE Conference on Communications and Network Security (CNS), 2019. (28% acceptance rate)
2. Ala Altaweel, Radu Stoleru, and Guofei Gu “EvilDirect: A New Wi-Fi Direct Hijacking Attack and Countermeasures.” The 26<sup>th</sup> International Conference on Computer Communications and Networks (ICCCN), 2017. (25% acceptance rate)
3. Ala Altaweel, Radu Stoleru, and Subhajit Mandal “On Secure Shared Key Establishment for Mobile Devices using Contextual Information.” The 34<sup>th</sup> IEEE International Performance Computing and Communications Conference (IPCCC), 2015. (29% acceptance rate)
4. Subhajit Mandal, Chen Yang, Ala Altaweel, and Radu Stoleru “An Efficient Pairwise Key Establishment Scheme for Ad hoc Mobile Clouds.” The 11<sup>th</sup> IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), 2015. (29% acceptance rate)
5. Adnan Tareq, Boris Koldehofe, Ala Altaweel, and Kurt Rothermel “Providing basic security mechanisms in broker-less publish/subscribe systems.” The 4<sup>th</sup> ACM International Conference on Distributed Event Based Systems (DEBS), 2010. (25% acceptance rate)
6. Mohammad Sagor, Radu Stoleru, Suman Bhunia, Ala Altaweel, Maxwell Maurice, and Roger Blalock “R-DRIVE: A Resilient Data Storage and Sharing Service for Mobile Edge Computing Systems.” **To be submitted**
7. Suman Bhunia, Radu Stoleru, Mohammad Sagor, Ala Altaweel, Mengyuan Chao, Amran Haroon, Maxwell Maurice, and Roger Blalock “EdgeKeeper: Resilient and Lightweight Coordination for Mobile Edge Computing Systems.” **To be submitted**

### • Refereed Journals

8. Amin Hassanzadeh, Ala Altaweel, and Radu Stoleru “Traffic-and-Resource-Aware Intrusion Detection in Wireless Mesh Networks.” AdHoc Networks (**Elsevier**), 2014
9. Mengyuan Chao, Harsha Chenji, Chen Yang, Radu Stoleru, Evdokia Nikolova, and Ala Altaweel “EAR: Energy-Aware Risk-averse Routing for Disaster Response Networks.” AdHoc Networks (**Elsevier**), 2020
10. Ala Altaweel, et. al. “Title is hidden due to double-blind review process.” **Under Review.**
11. Ala Altaweel, Radu Stoleru, Guofei Gu, and Arnab Kumar Maity “On Detecting CollusiveHijack Attack in Opportunistic Networks.” **To be submitted**
12. Aaron Parks-Young, Ala Altaweel, Subhajit Mandal, Chen Yang, and Radu Stoleru “Real-World Implementation of Pairwise Key Establishment Scheme for Ad hoc Mobile Clouds.” **To be submitted**

### • Thesis and Dissertation Works

13. Ala Altaweel “[On Securing Wi-Fi Direct Based Opportunistic Networks.](#)” PhD Dissertation, Texas A&M University, May 2019
14. Ala Altaweel “[Providing basic security mechanisms in a Publish/Subscribe system.](#)” M.S. Thesis University of Stuttgart, July 2009

## Academic Experiences

---

- **University of Sharjah, Sharjah, UAE - College of Computing and Informatics, Department of Computer Engineering**
  - **Assistant Professor** (Sep2020 – present)
- **Texas A&M University, College Station, Texas - Department of Computer Science and Engineering**
  - **Postdoctoral Researcher**
    - Mentor: Prof. Radu Stoleru, Laboratory for Embedded & Networked Sensor Systems (May2019 – May2020)
  - **Instructor (Graduate Teaching Fellow):**
    - **Wireless and Mobile Systems (UG)** (Spring 2018)
  - **Research Assistant:**

- Advisor: Prof. Radu Stoleru (Summer 2018, Fall 2018, Spring 2019)
- **Teaching Assistant:**
  - **Data Structures and Algorithms (UG)** (Spring 2015, Summer 2015, Fall 2016, Spring 2017). Instructors: Dr. Teresa Leyk, Dr. J. Michael Moore
  - **Introduction to Computer Systems (UG)** (Summer 2015). Instructor: Prof. Riccardo Bettati
  - **Operating Systems (G+UG)** (Summer 2017). Instructor: Prof. Riccardo Bettati
  - **Wireless and Mobile Systems (UG)** (Fall 2017). Instructor: Prof. Mahima Agumbe Suresh
- **Guest Lecturer:**
  - **Wireless and Mobile Systems (G)** (seven lectures during Fall 2017, Fall 2018, Spring 2019, Fall 2019). Topics: ns3, IEEE 802.11 Distributed Coordination Function (DCF) protocol, TCP over Wireless Networks, Wireless security, Internet of Things. Hosts: Prof. Radu Stoleru and Prof. Mahima Agumbe Suresh
  - **Operating Systems (UG)** (two lectures during Fall 2017). Topics: Dispatching, Scheduling and File Systems on the x86. Host: Prof. Radu Stoleru
  - **Distributed Systems (UG)** (one lecture during Spring 2020). Topics: Mutual Exclusion and Election Algorithms: Maekawa Voting Algorithm, Bully Algorithm, Ring Algorithm. Host: Prof. Radu Stoleru
- **Grader:**
  - **Analysis of Algorithms (G)** (Spring 2016). Instructor: Prof. Anxiao (Andrew) Jiang
  - **Data Structures and Algorithms (UG)** (Fall 2014, Fall 2015). Instructor: Dr. Teresa Leyk
- **German Jordanian University, Amman, Jordan - Department of Computer Engineering**
  - **Teaching Assistant:**
    - **Computing Fundamentals (UG)** (Fall 2011).
    - **Computer Architecture and Organization (UG)** (Spring 2012).
    - **Digital Systems Design (UG)** (Fall 2011).
    - **Object-Oriented Programming (UG)** (Spring 2012, Fall 2012).
    - **Algorithms and Data Structures (UG)** (Fall 2012).
    - **Operating Systems (UG)** (Fall 2011, Fall 2012).
    - **Software Engineering (UG)** (Spring 2012).
    - **Systems Programming (UG)** (Spring 2012).
- **University of Stuttgart, Stuttgart, Germany**
  - **Research Intern:**
    - Parallel and Distributed Systems Institute (Sep2009 - Mar2010)
    - Mentor: Prof. Kurt Rothermel
  - **Software Engineer:**
    - High Performance Computing Center Stuttgart (HLRS) (Aug2008 - Aug2009)
    - Design and implement a Java-GUI using Google web toolkit (GWT) that is integrated with web services to facilitate end users' SQL queries
    - Project: ViroLab, [project link](#)
  - **Software Engineer:**
    - Visualization and Interactive Systems Institute (Jan2008 - Jul2008)
    - Integrate JFreeChart library with web services to show statistics about industrial projects and patents
    - Project: PATExpert (Advanced Patent Document Processing Techniques)

## Student Mentoring

---

- LENS Lab, Texas A&M University
  - Subhajit Mandal, M.S. student, for coauthoring in a research paper (4 under publications)
  - Aaron Parks-Young, M.S. student, for coauthoring in a research paper (12 under publications)

- Mohammad Sagor, M.S. student, for coauthoring in a research paper (6 under publications)
- Kristopher Schlett, undergrad student, for integrating RSocket with Libconfig library in his summer internship

## Projects

---

### • Research Projects

- **Resilient Routing Protocol for Wireless Networks**, Texas A&M University, Postdoctoral research project
  - Implement a new routing protocol, Resilient Socket (RSocket), for diverse wireless networks to be used by first responder equipment for Linux and Android platforms using C++ and Java
  - RSocket provides routing under well and sparsely connected networks and it utilizes the Global Naming Scheme (GNS) based GUID as resource identities
  - Built the system using Java for Linux and Android platforms
  - Successfully demonstrated RSocket and its integration with other Distressnet-NG applications at NIST PSCR meeting in Chicago and at NIST outdoor deployment at Gypsum, Colorado
  - Deployed RSocket for a team of first responders in a real-life search and rescue operation at the Winter Institute at Disaster City, College Station, TX
  - 6, 7, and 10 under publications, [project link](#)
- **Contextual Information for Wi-Fi Direct Security**, Texas A&M University, PhD research project
  - Design and Implement an algorithm to generate a secure session key for the Wi-Fi Protected Setup protocol in Android smartphones using C for LineageOS Android distribution (3 under publications)
  - Design and Implement a protocol to detect the EvilDirect attack (2 under publications) in Android smartphones using Java
  - Design and implement two algorithms to detect the CollusiveHijack attack (1 under publications) for Linux platform using python and R statistical language
- **Spontaneous Virtual Networks**, University of Stuttgart, Research Intern project
  - Design and implement an algorithm to provide confidentiality and authentication in broker-less content-based publish-subscribe systems, 5 under publications

### • Course Projects

- **Distributed Password Cracker**, Texas A&M University, Spring 2013
  - Implement a distributed system that can harness the power of many processors to speed up the compute-intensive password cracking task using C
- **Geographic Forwarding Routing Protocol**, Texas A&M University, Fall 2013
  - Implement the geographic forwarding routing protocol in Glomosim network simulator using C
- **Simple Chat Service**, Texas A&M University, Fall 2016
  - Implement a client-server “chat room” system to handle a finite number of clients to join/leave a global chat session using the Simple Broadcast Chat Protocol (SBCP) using C++
- **Trivial File Transfer Protocol (TFTP) Server**, Texas A&M University, Fall 2016
  - Implement a TFTP server (IETF RFC 1350) to allow TFTP clients to retrieve files from the server’s local directory using C++
- **Simple HTTP Proxy**, Texas A&M University, Fall 2016
  - Implement an HTTP proxy server and HTTP command line client for HTTP/1.0 (RFC 1945) using C++

## Talks, Presentations, Demos

---

### • Research Papers

- The IEEE Conference on Communications and Network Security (CNS), Washington, D.C., USA, Jun2019:
  - “CollusiveHijack: A New Route Hijacking Attack and Countermeasures in Opportunistic Networks”

- The IEEE International Performance Computing and Communications Conference (IPCCC), Nanjing, China, Dec2015:
  - “On secure shared key establishment for mobile devices using contextual information”
  - “On Balancing the Energy Consumption of Routing Protocols for Opportunistic Social Networks”
  - “On the Coexistence of 802.11 and 802.15.4 Networks with Delay Constraints”
- The IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), Abu Dhabi, UAE, Oct2015:
  - “An efficient pairwise key establishment scheme for ad-hoc mobile clouds”
  - “On Modeling Single Cell IEEE 802.11 Ad-Hoc Networks with Power Saving Mode”

#### • Research Projects Demos

- The 2019 Public Safety Broadband Stakeholder Meeting (PSCR), Chicago, USA, Jul2019:
  - A demo of a man backpack - containing LTE core, eNodeB base station, and Wi-Fi - that can be carried by public-safety personnel with smartphones into an area that lacks traditional network coverage to provide resilient communication using RSocket (6, 7, and 10 under publications)

## Services

---

#### • Selected Journal/Conference Reviewer

- IEEE Transactions on Information Forensics & Security (TIFS)
- Elsevier Ad Hoc Networks
- IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS)
- IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob)
- IEEE Annual Consumer Communications & Networking Conference (CCNC)
- International Journal of Distributed Sensor Networks

## Industrial Experiences

---

#### • Software Engineer

- Javna Mobile Media and Technology Solutions, Amman, Jordan (Feb2006 to Aug2007)
- Design and implement software systems, services, and dynamic link libraries (DLL) for 3-tier web applications using C++ and C#.net
  - Design and implement short message peer-to-peer (SMPP) services for exchanging SMS messages with mobile operators' SMS data-bases using C#.net
  - Projects: Redrabit, [project link](#); Epicenter, [project link](#)

## Computer Skills

---

- **Environments:** *Proficient:* Linux, Windows, Android, iOS
- **Programming Languages:** *Proficient:* C/C++, Java, Python; *Familiar:* C#.net, ASP.net, MATLAB, R
- **Kernel Programming:** *Proficient:* Android Mobile Operating System (LineageOS)
- **Web Technologies:** *Proficient:* HTML, XML, Web Services, Java Script, and Google Web Toolkit (GWT)
- **Database Systems:** *Familiar:* MySQL

## References

---

#### • Academic:

- i. **Radu Stoleru, PhD Committee Chair and Advisor**, Professor, Department of Computer Science and Engineering, Texas A&M University, College Station, TX, USA  
*Email:* [stoleru@cse.tamu.edu](mailto:stoleru@cse.tamu.edu)

- ii. **Guofei Gu, PhD Committee Member, PhD Qualifier Examiner**, Professor, Department of Computer Science and Engineering, Texas A&M University, College Station, TX, USA  
*Email: [guofei@cse.tamu.edu](mailto:guofei@cse.tamu.edu)*
- iii. **Riccardo Bettati, PhD Qualifier Examiner, Instructor for two courses that I TA'ed**, Professor, Department of Computer Science and Engineering, Texas A&M University, College Station, TX, USA  
*Email: [bettati@cse.tamu.edu](mailto:bettati@cse.tamu.edu)*
- iv. **Kurt Rothermel, M.Sc. Advisor**, Professor, Department of Distributed Systems, University of Stuttgart, Stuttgart, Germany  
*Email: [kurt.rothermel@ipvs.uni-stuttgart.de](mailto:kurt.rothermel@ipvs.uni-stuttgart.de)*

• **Professional:**

- i. **Khaled Gharaibeh, Direct Manager**, Javna Mobile Media and Technology Solutions, Amman, Jordan  
*Email: upon request*
- ii. **Matthias Assel, Direct Manager**, High Performance Computing Center Stuttgart, Stuttgart, Germany  
*Email: upon request*