

Anwar Hithnawi

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Interests	Networking and Distributed systems	
Education	ETH Zurich, Switzerland Ph.D. in Computer Science Thesis title: "Low-power Wireless Systems Coexistence"	08/2012 - 11/2016
	RWTH Aachen University, Germany M.Sc. Software Systems Engineering Thesis title: "OFRA: On-Demand Feedback Rate-Adaptation Algorithm"	10/2009 - 12/2011
	Birzeit University, Palestine B.Eng. Computer Systems Engineering (5-year program) Thesis title: "Wojood: Enhancement Tools for Search in Arabic Web Documents"	09/2003 - 06/2008
Professional Experience	ETH Zurich, Switzerland Postdoctoral researcher, Distributed Systems Group Project: Blockchain-based Auditable Storage and Sharing of IoT Data	01/2017 - present
	ETH Zurich, Switzerland Research assistant, Distributed Systems Group Selected Projects: (i) Low-power Wireless Systems Coexistence, role: lead researcher - Designed and developed a suite of algorithms and system architectures that improve the robustness of low-power wireless networks operating in interference-rich environments. (ii) Encrypted Data Processing and Sharing, role: collaborator - Collaborated on the design and evaluation of Talos (talos-crypto.github.io).	08/2012 - 12/2016
	Stanford University, CA, United States Research internship, Network Systems Group (supervisor: Prof. Sachin Katti) Project: Backscatter Communication - Developed a simulator for BackFi, a high throughput WiFi Backscatter communication system. Designed and benchmarked various MAC protocol designs for BackFi.	06/2015 - 08/2015
	RWTH Aachen University, Germany Student research assistant, Communication and Distributed Systems Group Project: WiFi Rate Adaptation Scheme with On-Demand Feedback - Designed, developed, and rigorously evaluated OFRA, an on-demand feedback rate adaptation algorithm that works with ACK-less traffic.	12/2011 - 04/2012
	RWTH Aachen University, Germany Student research assistant, Communication and Distributed Systems Group Project: Reflector - Heuristic Packet Repair Mechanisms - Ported and validated Reflector in the NS3 simulator. Reflector is a heuristic header error recovery scheme for error-tolerant transmissions.	04/2010 - 04/2011
	Birzeit University, Palestine Research assistant, Department of Computer Systems Engineering Project: Query Pre-processing for Efficient Search in Arabic Web Documents - Designed and developed a suite of automated tools for efficient search in Web-based Arabic documents. This project was a continuation of my Bachelor thesis and has been awarded multiple international prizes, including the Google research award.	08/2008 - 02/2009

Awards

- **N2Women** Young Researcher Fellowship, 2014
- Selected as participant in the **ACM** Student Research Competition (SRC) at ACM MobiCom, 2014 and 2015
- **Google** Anita Borg Scholarship Recipient, 2011
- Awarded **DAAD** Scholarship for Graduate Study, Germany, 2009-2011
- Co-authored with Adnan Yahya (PI) a proposal on "Query Pre-processing for Efficient Search in Arabic Web Documents". It received the **Google** research award, 2009
- Bachelor thesis awarded first prize in Information Technology Student's Activity Fair (ITSAF), Jordan, 2008
- Birzeit University Merit Scholarship, Palestine, 2003-2008
- Birzeit University Dean's Honor List, Palestine, 2003, 2004, 2005

Teaching & Mentoring @ETH Zurich

Teaching Assistant

My role included: designing problem sets, teaching weekly tutorial sessions, grading assignments and course projects, correction of exams, helping in designing final exams, guiding students on presenting and writing seminar research papers.

- Informatics II for Electrical Engineers Spring 2013, 2014, 2015, 2016, 2017
- Ubiquitous Computing Seminar Spring 2014, 2015
- Ubiquitous Computing Spring 2014
- Distributed Systems Fall 2012, 2015

Research Mentor

I advised the following students on their theses at the Distributed Systems group. Lukas Burkhalter (Master thesis, 2017), Erfan Abdi (Semester project, 2015-2016), Dominic Plangger (Master thesis, 2015), Su Li (Master thesis, 2014-2015, now PhD student at EPFL), Vaibhav Kulkarni (Master thesis, 2014-2015, now PhD student at the University of Lausanne), Jan Wolf (Bachelor thesis, 2013-2014)

Professional Activities

Publication Chair: ACM IPSN'15
Shadow Program Committee: ACM IPSN'15
External Reviews: ACM TOSN'17, ACM MSWiM'16, IEEE LCN'14, Elsevier Com-Com'14, WoT'13

Service & Leadership

- ETH Zurich, Invited Panelist, Panel for Woman in Computer Science, 2017
- ETH Zurich, Discovery Semester for Refugees, Interviewing Applicants and Serving as Mentor for One of the Selected Students, 2016
- Grace Hopper Celebration of Women in Computing, Scholarship Applications Reviewer, 2016
- N2Women Board Member, Co-chair N2Women Mentoring Program, 2015-2016
- ACM MobiCom (Mobile Computing and Networking), Organizer of N2Women Event, 2014
- ACM UbiComp (Joint Conference on Pervasive and Ubiquitous Computing), Local Arrangement Committee (local chair for demos and posters), 2013
- ISWC (International Symposium on Wearable Computers), Local Arrangement Committee (design exhibition), 2013

Technical Skills	<p>Programming: C/C++, Java, Python</p> <p>Operating Systems: UNIX (OS X, Ubuntu), Contiki OS (OS for IoT)</p> <p>Network: TCP/IP, PHY/MAC (802.11 and 802.15.4), SDN, P2P</p> <p>Data Analysis: Machine Learning basics</p> <p>Others: Encrypted Data Processing, Blockchain, Internet of Things</p> <p>Implementation Platforms:</p> <ul style="list-style-type: none"> - Software Defined Radios: USRP, GnuRadio - Embedded system's programming (msp430, arm) - Simulation: MATLAB, NS-3, Cooja - Wireless sensor network testbeds
Languages	English (fluent), German (upper-intermediate B2), Arabic (native)
Selected Refereed Publications	<ul style="list-style-type: none"> • Hossein Shafagh, Anwar Hithnawi. Privacy-preserving Quantified Self: Encrypted Sharing and Processing of Encrypted Small Data. In <i>ACM MobiArch@SIGCOMM</i>, 2017 • Anwar Hithnawi, Su Li, Hossein Shafagh, James Gross, Simon Duquennoy. CrossZig: Combating Cross-Technology Interference in Low-power Wireless Networks. In <i>ACM International Conference on Information Processing in Sensor Networks (IPSN)</i>, PDF, 2016 • Hossein Shafagh, Anwar Hithnawi, A. Dröscher, S. Duquennoy, Wen Hu. Talos: Encrypted Query Processing for the Internet of Things. In <i>ACM Conference on Embedded Networked Sensor Systems (SenSys)</i>, PDF, 2015 • Anwar Hithnawi, Vaibhav Kulkarni, Su Li, Hossein Shafagh. Controlled Interference Generation for Wireless Coexistence Research. In <i>Software Radio Implementation Forum (SRIF@MobiCom)</i>, PDF, 2015 • Anwar Hithnawi, Hossein Shafagh, Simon Duquennoy. TIIM: Technology-Independent Interference Mitigation for Low-power Wireless Networks. In <i>ACM International Conference on Information Processing in Sensor Networks (IPSN)</i>, PDF, 2015.
Selected Posters & Demos	<ul style="list-style-type: none"> • Hossein Shafagh, Anwar Hithnawi, Simon Duquennoy. Poster: Towards Blockchain-based Auditable Storage and Sharing of IoT Data. In <i>Usenix NSDI</i>, 2017 • Hossein Shafagh, Anwar Hithnawi, A. Dröscher, S. Duquennoy, Wen Hu. Poster: Towards Encrypted Query Processing for the Internet of Things. In <i>ACM MobiCom</i>, 2015, <i>Selected for ACM Student Research Competition (SRC)</i> • Hossein Shafagh, Anwar Hithnawi. Poster: Come Closer - Proximity-based Authentication for the Internet of Things. In <i>ACM MobiCom</i>, 2014, <i>Selected for ACM's Student Research Competition (SRC)</i> • Anwar Hithnawi. Poster: Exploiting Physical Layer Information to Mitigate Cross-Technology Interference Effects on Low-Power Wireless Networks. In <i>ACM SenSys</i>, 2013

Selected Talks

- ACM IPSN Conference, April 2016, Wien, Austria
Title: *CrossZig: Combating Cross Technology Interference in Low-power Wireless Networks*
- Invited talk at INRIA, February 2016, Lille, France
Title: *Combating Cross-Technology Interference in Low-power Wireless Networks*
- The Software Radio Implementation Forum, September 2015, Paris, France
Title: *Controlled Interference Generation for Wireless Coexistence Research*
- ACM IPSN Conference, April 2015, Seattle, WA, USA
Title: *TIIM: Technology-Independent Interference Mitigation for Low-power Wireless Networks*
- ACM IPSN PhD Forum, April 2015, Seattle, WA, USA
Title: *Title: Resource-Efficient Mechanisms for Wireless Coexistence*
- ACM WiNTECH Workshop, September 2014, Maui, Hawaii USA
Title: *Understanding the Impact of Cross Technology Interference*

References

Prof. Friedemann Mattern (Academic Advisor)

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Prof. James Gross

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Prof. Klaus Wehrle

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Dr. Simon Duquennoy

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