

Arman (MHR) KHOUZANI

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EXPERIENCE

- | | |
|---|--|
| ► Lecturer in Computer Science (Research & Teaching)
Queen Mary, University of London (QMUL), School of EECS | November 2016 – Current
London, UK |
| ► Postdoctoral Research Associate
Queen Mary, University of London (QMUL), School of EECS
<i>Supervisor: Prof. Pasquale Malacaria</i> | March 2015 – Nov 2016
London, UK |
| ► Postdoctoral Research Assistant
Royal Holloway, University of London (RHUL), Inf. Security Group (ISG)
<i>Supervisor: Prof. Carlos Cid</i> | Sep 2013 – March 2015
Egham, Surrey, UK |
| ► Postdoctoral Scholar-Research Associate
University of Southern California (USC), Electrical Engineering-Systems
<i>Supervisor: Prof. Rahul Jain</i> | Jan 2013–July 2013
Los Angeles, CA, USA |
| ► Postdoctoral Researcher
The Ohio State University (OSU), Electrical & Computer Eng. Department
<i>Supervisor: Prof. Ness B. Shroff</i> | Aug 2011–Jan 2013
Columbus, OH, USA |

EDUCATION

- | | |
|---|---------------|
| PhD, Electrical and Systems Engineering
University of Pennsylvania, Philadelphia, PA, USA. | July 2011 |
| <i>Dissertation title: "Optimal Control of Mobile Malware Epidemics"</i>
<i>Thesis Adviser: Prof. Saswati Sarkar</i> | |
| MSE, Electrical Engineering, University of Pennsylvania, Philadelphia, PA, USA. | December 2008 |
| BSc, Electrical Engineering, Sharif University of Technology, Tehran, Iran. | August 2006 |

HONOURS AND AWARDS

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|--|---------------|
| • Tier-1 (Exceptional Talent) visa supported by The Royal Society, UK | March 2015 |
| • Joseph, D'16, and Rosaline Wolf Award for Best PhD Dissertation,
Department of Electrical and Systems Engineering, University of Pennsylvania. | December 2011 |
| • Fellowship Award, Electrical and Systems Engineering, University of Pennsylvania. | 2006-2011 |
| • Graduated in top 7% of class of 2006 in Electrical Engineering,
Sharif University of Technology, Tehran, Iran. | July 2006 |

- **Ranked 45th among ~ 400,000 participants,**
Iran's Annual Nationwide University Entrance Exam (Concours)

May 2002

BOOK

- Vasileios Karyotis, **MHR. Khouzani**, "Malware Diffusion Models for Wireless Complex Networks: Theory and Applications", *Elsevier, Morgan Kaufmann Publishers*, Released on: 01 Feb 2016.

PEER-REVIEWED JOURNAL PAPERS

- **MHR. Khouzani**, Pasquale Malacaria, Chris Hankin, Andrew Fielder, Fabrizio Smeraldi, "A Framework for Optimal Planning in Cyber Security.", under review
- **MHR. Khouzani**, Pasquale Malacaria, "Universally Optimal Strategies for Minimum Information Leakage", *IEEE Trans. on Information Theory (IT)*, under review.
- S. Eshghi, **MHR. Khouzani**, S. Sarkar, N. B. Shroff, S. S. Venkatesh, "Optimal Energy-Aware Epidemic Routing in DTNs", *IEEE Trans. on Automatic Control (TAC)*, Vol. 60, Issue 6, Jan 2015.
- S. Eshghi, **MHR. Khouzani**, S. Sarkar, S. S. Venkatesh, "Optimal Patching in Clustered Malware Epidemics", *IEEE/ACM Trans. on Networking (TON)*, Vol. PP, Issue 99, Nov 2014.
- S. Sarkar, **MHR. Khouzani**, Koushik Kar, "Optimal Routing and Scheduling in Multihop Wireless Renewable Energy Networks", *IEEE Trans. on Automatic Control (TAC)*, Vol. 58, No. 7, March 2013.
- **MHR. Khouzani**, S. Sarkar, E. Altman, "Maximum Damage Malware Attack in Mobile Wireless Networks", *IEEE/ACM Trans. on Networking (ToN)*, Vol. 20, No. 5, Oct 2012.
- **MHR. Khouzani**, S. Sarkar, E. Altman, "Optimal Dissemination of Security Patches in Mobile Wireless Networks", *IEEE Trans. on Information Theory (IT)*, Vol. 58, No. 7, July 2012.
- **MHR. Khouzani**, S. Sarkar, E. Altman, "Saddle-Point Strategies in Malware Attack", *IEEE Jnl. on Selec. Areas in Comm. (JSAC): Game Theory in Wireless Communications*, Vol. 30, No. 1, Jan 2012.
- **MHR. Khouzani**, E. Altman, S. Sarkar, "Optimal Quarantining of Wireless Malware Through Reception Gain Control", *IEEE Trans. on Automatic Control (TAC)*, Vol. 57, No. 1, pp. 49-61, Jan 2012.
- **MHR. Khouzani**, S. Sarkar, "Maximum Damage Battery Depletion Attack in Mobile Sensor Networks", *IEEE Trans. on Automatic Control (TAC): Special Issue on Wireless Sensor and Actuator Networks*, Vol. 56, No. 10, pp. 2358-2368, Oct 2011.
- **MHR. Khouzani** and S. Sarkar, "Economy of Spectrum Access in Time Varying Multi-Channel Networks", *IEEE Trans. on Mobile Computing (TMC)*, Vol. 9(10). pp. 1361-1376, Oct 2010.

PEER-REVIEWED CONFERENCE PROCEEDINGS

- **MHR. Khouzani**, Pasquale Malacaria, "Leakage-Minimal Design: Universality, Limitations, and Applications", In *30th IEEE Computer Security Foundations Symposium (IEEE CSF 2017)*, August 2017, Santa Barbara, CA, USA
- **MHR. Khouzani**, Pasquale Malacaria, Chris Hankin, Andrew Fielder, Fabrizio Smeraldi, "Efficient Numerical Frameworks for Multi-Objective Cyber Security Planning", In *European Symposium on Research in Computer Security (ESORICS) 2016*, Heraklion, Greece, September, 2016
- **MHR. Khouzani**, Pasquale Malacaria, "Relative Perfect Secrecy: Universally Optimal Strategies and Channel Design", In *29th IEEE Computer Security Foundations Symposium (IEEE CSF 2016)*, Lisboa, Portugal, July 2016.

- **MHR. Khouzani**, Piotr Mardziel, Carlos Cid, Mudhakar Srivatsa, "Picking vs. Guessing Secrets: A Game-Theoretic Analysis", In *28th IEEE Computer Security Foundations Symposium (IEEE CSF 2015)*, Verona, Italy, July 2015.
- Shangxing Wang, **MHR. Khouzani**, Bhaskar Krishnamachari, Fan Bai, "Optimal Control for Epidemic Routing of Two Files with Different Priorities in Delay Tolerant Networks", In *ACC 2015*, Chicago, IL, July 2015.
- **MHR. Khouzani**, Viet Pham, Carlos Cid, "Strategic Discovery and Sharing of Vulnerabilities in Competitive Environments", In *GameSec 2014*, Los Angeles, CA, Nov 2014.
- Viet Pham, **MHR. Khouzani**, Carlos Cid, "Optimal Contracts For Outsourced Computation", In *GameSec 2014*, Los Angeles, CA, November 2014.
- **MHR. Khouzani**, Viet Pham, Carlos Cid, "Incentive Engineering for Outsourced Computation in the Face of Collusion", In *WEIS 2014*, Pennsylvania State University, PA, June 2014.
- **MHR. Khouzani**, Soumya Sen, Ness B. Shroff, "Incentive Analysis of Bidirectional Threat Filtering in the Internet", In *WEIS 2013*, Washington, D.C, June 2013.
- **MHR. Khouzani**, Soumya Sen, Ness B. Shroff, "An Economic Analysis of Regulating Security Investments in the Internet", In *IEEE INFOCOM 2013*, Turin, Italy, April 2013.
- **MHR. Khouzani**, Soumya Sen, Ness B. Shroff, "Managing the Adoption of Asymmetric Bidirectional Firewalls: Seeding and Mandating", In *IEEE GLOBECOM 2012*, Anaheim, CA, Dec. 2012.
- **MHR. Khouzani**, S. Eshghi, S. Sarkar, S. S. Venkatesh, N. B. Shroff, "Optimal Energy-Aware Epidemic Routing in DTNs", In *ACM MobiHoc 2012*, Hilton Head Island, SC, June 2012.
- **MHR. Khouzani**, S. Sarkar, E. Altman, "A Dynamic Game Solution to Malware Attack", In *IEEE INFOCOM 2011*, Shanghai, China, April 2011.
- **MHR. Khouzani**, S. Sarkar, E. Altman, "Optimal Control of Epidemic Evolution", In *IEEE INFOCOM 2011*, Shanghai, China, April 2011.
- **MHR. Khouzani**, S. Sarkar, E. Altman, "Dispatch then Stop: Optimal Dissemination of Security Patches in Mobile Wireless Networks", In *IEEE CDC*, Atlanta, GA, December 2010.
- **MHR. Khouzani**, S. Sarkar, E. Altman, "Maximum Damage Malware Attack in Mobile Wireless Networks", In *IEEE INFOCOM 2010*, San Diego, CA, March 2010.

INVITED PROCEEDINGS

- **MHR. Khouzani**, S. Eshghi, S. Sarkar, S. S. Venkatesh, "Optimal Patching in Clustered Malware Epidemics", In *ITA*, San Diego, CA, Feb. 2012.
- **MHR. Khouzani**, S. Sarkar, S. S. Venkatesh, "Market-Based Control of Epidemics", In *Allerton*, UIUC, IL, September 2011.
- **MHR. Khouzani**, S. Sarkar, K. Kar, "Optimal Routing and Scheduling in Multihop Wireless Renewable Energy Networks", In *ITA*, San Diego, CA, Feb. 2011.
- **MHR. Khouzani**, S. Sarkar, "Dynamic Malware Attack in Mobile Wireless Networks", In *ITA*, San Diego, CA, Feb. 2010.
- **MHR. Khouzani**, E. Altman, S. Sarkar, "Optimal Quarantining of Wireless Malware Through Power Control", In *ITA*, San Diego, CA, Feb. 2009.
- A. Aaram, **MHR. Khouzani**, S. Sarkar, "A Fair Scheduling Policy for Wireless Channels with Intermittent Connectivity", In *CISS*, Princeton, NJ, March 2008.

AWARDED GRANTS

- ▶ **EP/R004897/1:** “Customized and Adaptive approach for Optimal Cybersecurity Investment”
Secondary investigator. Starts: 01 August 2017 Ends: 31 July 2020 Value (£): 388,777

TEACHING & MODULE ORGANIZER AT QMUL

- ▶ Module Organiser: *ECS635U: Security Engineering*, assisted by Dr Na Yao Spring 2018
- ▶ *ECS781P: Cloud Computing* (graduate), jointly with Dr Felix Cuadrado Spring 2018
- ▶ *ECS781P: Cloud Computing* (graduate), jointly with Dr Graham White Spring 2017

ADMINISTRATIVE ROLES AT QMUL

- ▶ Member of Core Computer Science Teaching Group
- ▶ Member of Networks and Systems Teaching Group
- ▶ Serving as Primary Student Adviser of 7 first year students
- ▶ Serving as the Project Supervisor of 9 3rd year undergraduate students (ECS635U) during 2017/18

TEACHING ASSISTANCE

- ▶ *ECS404: Computer Systems & Networks* (undergrad), Prof. Robinson, Dr Alomainy (QMUL) .. Fall 2016
- ▶ *ECS726: Security and Authentication* (undergrad), Prof. Raul J Mondragon (QMUL) Spring 2016
- ▶ *Networking - Theory & Fundamentals* (graduate), Prof. Saswati Sarkar (UPenn) Spring 2011
- ▶ *Electrical Circuits and Systems* (undergrad), Prof. Jan Van der Spiegel (UPenn) Spring 2010
- ▶ *Introduction To Dynamic Systems* (undergrad), Prof. Daniel E. Koditschek (UPenn) Fall 2010
- ▶ *Stochastic Systems Analysis and Simulation* (undergrad), Prof. Alejandro Ribeiro (UPenn) Fall 2009

MEMBERSHIP & PROFESSIONAL SERVICE

- ▶ **Member of:** IEEE, IEEE Communications Society, ACM, Institute of Mathematics and its Applications (IMA - Associate Member).
- ▶ **Proceeding Editor and Publication Chair:** GameSec 2015, the sixth Conference on Decision and Game Theory for Security, London, UK, November 4-5, 2015.
- ▶ **Technical Reviewer:**
 - IEEE Transactions on Information Forensics and Security (TIFS), IEEE Transactions on Control of Network Systems (TCNS), IEEE/ACM ToN, IEEE TAC, Journal of the ACM, IEEE TMC, IEEE JSAC, IEEE TWC, Applications of Mathematics (Elsevier), ICDCS, WiOpt, ICC, SCN, PLOS ONE, Performance Evaluation (PEVA - Elsevier), IoT/CPS-Security, ICC, IEEE CDC, IEEE ACC...
- ▶ **Technical Program Committee (TPC) Member:**
 - *GameSec 2017*, Vienna, Austria
 - *GameSec 2015*, London, UK
 - *WiOpt 2013*, Tsukuba Science City, Japan
 - *WiOpt 2012*, Paderborn, Germany
 - *GameSec 2011*, College Park, MD, USA.