

## Soo-Jin Moon

Electrical and Computer Engineering  
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- RESEARCH INTERESTS      Network security, Computer networks, Internet measurement
- EDUCATION      **Carnegie Mellon University**, Pittsburgh, PA
- Ph.D., Electrical and Computer Engineering, *2014 – present*
    - Advisor: Vyas Sekar
    - Expected Graduation: May 2020
    - Expected Thesis Title: Practical Black-Box Analysis for Network Elements: Techniques and Use Cases
  - University of Waterloo**, Waterloo, ON, Canada
    - BAS.c., Electrical Engineering, *2009 – 2014*
      - Graduated on a Dean’s Honour List with Distinction
      - Recipient of Sandford Fleming Awards for Co-operative Proficiency
- PUBLICATIONS
- [1] Yifei Yuan, **Soo-Jin Moon**, Sahil Uppal, Limin Jia, Vyas Sekar. NetSMC: A Custom Symbolic Model Checker for Stateful Network Verification. *To appear in USENIX NSDI 2020.*
  - [2] Zinan Lin, **Soo-Jin Moon**, Carolina M. Zarate, Ritika Mulagalapalli, Sekar Kurlandaivel, Giulia Fanti, Vyas Sekar. Towards Oblivious Network Analysis using Generative Adversarial Networks. *To appear in HotNets 2019.*
  - [3] **Soo-Jin Moon**, Jeffrey Helt, Yifei Yuan, Yves Bieri, Sujata Banerjee, Vyas Sekar, Wenfei Wu, Mihalis Yannakakis, Ying Zhang. Alembic: Automated Model Inference for Stateful Network Functions. *USENIX NSDI 2019.*
  - [4] **Soo-Jin Moon**, Vyas Sekar, Michael K. Reiter. Nomad: Mitigating Arbitrary Cloud Side Channels via Provider-Assisted Migration. *ACM CCS 2015.*  
**NSA Best Scientific Cybersecurity Paper, 2016**  
**CSAW 2015 Best Paper, Second place**
- UNDER SUBMISSION
- [5] **Soo-Jin Moon**, Yucheng Yin, Rahul Sharma, Yifei Yuan, Vyas Sekar. Accurately Measuring Global Risk of Amplification Attacks using AmpMap.
  - [6] **Soo-Jin Moon**, Yves Bieri, Madhuri Sampath, Ruben Martins, Vyas Sekar. Pryde: Blackbox Synthesis of Evasion Attacks Against Stateful Firewalls.
- INVITED TALKS, AND POSTERS
- Black-Box Approach to Network Security**
    - at Rising Stars in EECS, UIUC (Talk, Pitch competition) October 2019
  - Alembic: Automated Model Inference for Stateful Network Functions**
    - at USENIX NSDI 2019 (Talk) March 2019
    - Cylab Partners Conference (Poster) September 2019
  - Accurately Measuring Global Risk of Amplification Attacks using AmpMap**
    - at CONIX Annual Event (Lightning Talk, Poster) October 2019
    - at Cylab Partners Conference (Poster) September 2019

**Re-thinking Network Security in the Presence of Black-box Network Elements**

- at EuroDW18 co-located with EuroSys18 (Talk) April 2019

**Nomad: Mitigating Arbitrary Cloud Side Channels via Provider-Assisted Migration**

- at Assured Cloud Computing Seminar, UIUC (Invited Talk) January 2017

- at Cyber Security Awareness Week, NYU (Poster, Talk) November 2015

- at Cylab Partners Conference (Poster) September 2015

**HONORS, AND AWARDS**

- Rising Stars in EECS 2019
- NSA Best Scientific Cybersecurity Paper 2016
- CSAW 2015 Applied Research Best Paper, Second place 2015
- Sandford Fleming Awards for Co-operative Proficiency, awarded for both outstanding work term and academic records, University of Waterloo 2014
- Industrial Undergraduate Student Research Awards, Natural Sciences and Engineering Research Council of Canada (NSERC) 2014
- President's Research Award, University of Waterloo 2012
- Sandford Fleming Foundation Award for Work Term Report, University of Waterloo 2011
- President's Scholarship of Distinction, University of Waterloo 2009
- Nortel Networks Undergraduate Scholarship, University of Waterloo 2009

**PROFESSIONAL SERVICE**

**Judge**, CSAW applied security research competition, NYU 2016, 2017

**Seminar organizer**, Cylab Security Student Seminar June 2016 - October 2017

**WORK EXPERIENCE**

**Research Associate Intern**, Hewlett Packard Labs Summer 2016

**Digital Signal Processing Algorithm Developer**, ON Semiconductor Fall 2013

**Hardware Engineer**, IGNIS Innovation Spring 2013

**Software Developer**, Altera Corporation Summer 2012

**Software Developer**, Canada Pension Plan Investment Board Fall 2011

**BI/SQL/.NET Developer**, OpenText Corp. Spring 2011

**TEACHING**

**Carnegie Mellon University**

Fall 2018 **Introduction to Computer Security** *V. Sekar, B. Parno*

Spring 2016 **Network Security** *V. Sekar*

**GRADUATE COURSEWORK**

**Carnegie Mellon University**

Spring 2018 **Computer Networks** *S. Seshen*

Spring 2017 **Graduate Artificial Intelligence** *A. Procaccia, Z. Kolter*

Spring 2016 **Secure Software Systems** *L. Bauer*

Fall 2015 **Advanced & Distributed Operating Systems** *P. Gibbons*

Fall 2015 **Algorithms in the Real World** *G. Blelloch, A. Gupta*

Spring 2015 **Network Security** *V. Sekar*

Fall 2014 **Introduction to Computer Security** *V. Gligor*

Fall 2014 **Software-Defined Networking** *V. Sekar*

**and Network Function Virtualization**