Sarah Cooney

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Education

2017–2022 **University of Southern California - PhD Computer Science**, *Los Angeles, CA*.

2013–2017 **Saint Joseph's University - B.S. Mathematics and Computer Science**, *Philadelphia, PA*.
Cumulative GPA - 3.97, English Minor, Summa Cum Laude, Dean's List, Honor's Program

Research Experience

August 2022–Present **Assistant Professor**, *Department of Computing Sciences*,
Villanova University, Villanova, PA.
Tenure-track assistant professor in computer science.

May 2019–May 2022 **Graduate Student Research Assistant**, *Dr. Barath Raghavan*,
University of Southern California, Los Angeles, CA.
Creating co-creative tools for novice urban design and tactical urban revitalization.

June 2019 **Summer Institute in Computational Social Science**, *Center for Population Research*,
University of California Los Angeles, Los Angeles, CA.
Two week summer institute covering major topics in computation social science.

August 2017–May 2019 **Graduate Student Research Assistant**, *Dr. Milind Tambe*,
University of Southern California, Los Angeles, CA.
Conducting human subject tests of game theoretic signaling algorithms for cyber security. Creating improved signaling models for boundedly rational adversaries.
Developing mobile applications to study decision making of Los Angeles street gang members in the context of adversarial groups.

Teaching Experience

Assistant Professor, *Villanova University, Villanova, PA*,
CSC1051: Algorithms & Data Structures I - Fall 2022.

2017—2021 **Teaching Assistant**, *University of Southern California, Los Angeles, CA*,
Discrete Mathematics - Fall 2021
Computing for Social Good - Spring 2021
Discrete Mathematics - Fall 2019
USC Discover Program - July 2019
Data Structures - Summer 2019
Software Engineering - Fall 2017.

Honors and Awards

2018	**2018 US Building Cybersecurity Diversity Scholarship**	*Financial Services ISAC*
2017	**Women in Science and Engineering PhD Top-off Fellowship**	*University of Southern California*

Publications and Presentations

Conference Proceedings

Riding the Bus in Los Angeles: Creating Cultural Micro-Exposures via Technology,
Sarah Cooney.
In proceedings of alt.CHI 2021 at CHI 2021, Virtual, May 2021

Adaptive Cyber Deception: Cognitively Informed Signaling for Cyber Defense,
Edward A. Cranford, Palvi Aggarwal, Cleotilde Gonzalez, Sarah Cooney, Milind Tambe, Christian Lebiere.
In proceedings of the 53rd Hawaii International Conference on System Sciences, Maui, HI, 2020 ** Best Paper - Digital Government Track

Learning to Signal in the Goldilocks Zone: Improving Adversary Compliance in Security Games,
Sarah Cooney, Kai Wang, Elizabeth Bondi, Thanh Nguyen, Phebe Vayanos, Hailey Winetrobe, Edward A. Cranford, Cleotilde Gonzalez, Christian Lebiere, Milind Tambe.
In proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, Würzburg, Germany, 2019 (in press.)

Towards Personalized Deceptive Signaling for Cyber Defense Using Cognitive Models,
Edward A. Cranford, Cleotilde Gonzalez, Palvi Aggarwal, Sarah Cooney, Milind Tambe, Christian Lebiere.
In proceedings of the 17th Annual Meeting of the International Conference on Cognitive Modelling, Montreal, Canada, 2019

Warning Time: Optimizing Strategic Signaling for Security Against Boundedly Rational Adversaries,
Sarah Cooney, Thanh H. Nguyen, Edward A. Cranford, Christian Lebiere, Cleotilde Gonzalez, Phebe Vayanos, Milind Tambe.
In proceedings of the International Conference on Autonomous Agents and Multiagent Systems, Montreal, Canada, 2019 (As Extended Abstract)

Learning about Cyber Deception through Simulations: Predictions of Human Decision Making with Deceptive Signals in Stackelberg Security Games,
Edward A. Cranford, Christian Lebiere, Cleotilde Gonzalez, Sarah Cooney, Phebe Vayanos, Milind Tambe.
In proceedings of the Annual Meeting of the Cognitive Science Society, Madison, WI, 2018

Journal Papers

Opening the Gate to Urban Repair: A Tool for Citizen-Led Design,
Sarah Cooney and Barath Raghavan.
In Proceedings of the ACM on Human-Computer Interaction 6 (CSCW1)

Towards a Cognitive Theory of Cyber Deception,
Edward A. Cranford, Cleotilde Gonzalez, Palvi Aggarwal, Milind Tambe, Sarah Cooney, Christian Lebiere.
In Cognitive Science, July 2021

Toward Personalized Deceptive Signaling for Cyber Defense Using Cognitive Models,
Edward A. Cranford, Cleotilde Gonzalez, Palvi Aggarwal, Sarah Cooney, Milind Tambe, Christian Lebiere.
In TopiCS in Cognitive Science, Forthcoming Topic: Best of Papers from the 17th International Conference on Cognitive Modeling, Early Release July 2020

Workshop Papers

Alternative Pathways to Caring for Limits: The Case of Ecospirituality,
Sarah Cooney, Vishal Sharma, Joshua Palmer, Neha Kumar, and Barath Raghava.
In Eighth Workshop on Computing within Limits, Virtual, June 2022

Generative AI as a Tool for Speculative Urban Futures,
Sarah Cooney.
In Generative AI and HCI, CHI 2022, Virtual, May 2022

Religion in SHCI Through a Catholic Eco-Sprituality Lens,
Sarah Cooney, Vishal Sharma, Barath Raghavan, and Neha Kumar.
In Integrating Faith, Religion, and Spirituality in HCI, CHI 2022, New Orleans, Louisiana, May 2022

Toward Co-Creative Tools for Tactical Urban Revitalization,
Sarah Cooney.
In Doctoral Constortium, CHI 2021, Virtual, May 2021

Mobile Game Theory with Street Gangs,
Sarah Cooney, Wendy Gomez, Kai Wang, Jorja Leap, P. Jeffrey Brantingham, Milind Tambe.
In ECML PKDD 4th Workshop on Data Science for Social Good (SoGood), Würzburg, Germany, September 2019

Signaling Just Enough: Learning to Find the Goldilocks Zone to Improve Adversary Compliance in Security Games,
Sarah Cooney, Kai Wang, Elizabeth Bondi, Thanh Nguyen, Phebe Vayanos, Hailey Winetrobe, Edward A. Cranford, Cleotilde Gonzalez, Christian Lebiere, Milind Tambe.
In IJCAI 1st Workshop on Artificial Intelligence for Business Security (AIBS), Macao, China, August 2019

Current Security Threats and Prevention Measures Relating to Cloud Services, Hadoop Concurrent Processing, and Big Data,
Ather Sharif, Sarah Cooney, Andrew Vitek, Shengqi Gong.
Presented at the 2nd International Workshop on Privacy and Security of Big Data during the 2015 IEEE International Conference on Big Data, San Jose, CA, 2015

Preprints

Tactical Patterns for Grassroots Urban Repair,
Sarah Cooney and Barath Raghavan.
October 2020 *arXiv:2010.02401*

Service and Outreach

- Speaker for PhD admitted students event Spring 2021
- Member of USC Women in Science and Engineering (WISE) PhD Advisory Board

- Mentor for USC WISE undergraduate summer research fellow Summer 2019

- ACM COMPASS 2021 Shadow PC Participant

- Mentor for incoming students with the Viterbi Graduate Mentorship Program

- Organizer for Women in Computing Club seminars and lunches at USC