

# Bryan Wilder

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## Education

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PhD Student in Computer Science 2015-Present  
University of Southern California  
Adviser: Milind Tambe

B.S. Computer Science (*summa cum laude*) 2011-2015  
Minor in Mathematics  
University of Central Florida  
GPA: 4.0  
Thesis: Sparsification of Social Networks Using Random Walks. Advised by Gita Sukthankar.  
**Outstanding Thesis Award for Science and Engineering.**

## Awards

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2017 Nominated for AAMAS Best Paper Award  
2016 AAAI Best Video Award  
2016 National Science Foundation Graduate Research Fellowship  
2015 University of Southern California Annenberg Fellowship  
2011-2015 University of Central Florida President's Honor Roll  
2011-2015 University of Central Florida Provost Scholar  
2014 Boeing Scholarship

## Rigorously reviewed conference publications

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Mohammad Javad Azizi, Phebe Vayanos, **Bryan Wilder**, Eric Rice, Milind Tambe. Designing Fair, Efficient, and Interpretable Policies for Prioritizing Homeless Youth for Housing Resources. *International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR)*. 2018.

**Bryan Wilder**, Laura Onasch-Vera, Juliana Hudson, Jose Luna, Nicole Wilson, Robin Petering, Darlene Woo, Milind Tambe, Eric Rice. End-to-End Influence Maximization in the Field. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*. 2018.

**Bryan Wilder**, Han Ching Ou, Kayla de la Haye, Milind Tambe. Optimizing network structure for preventative health. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*. 2018.

**Bryan Wilder**, Yevgeniy Vorobeychik. Controlling Elections through Social Influence. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*. 2018.

Lily Hu, **Bryan Wilder**, Amulya Yadav, Eric Rice, and Milind Tambe. Activating the "Breakfast Club": Modeling Influence Spread in Natural-World Social Networks. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*. 2018.

**Bryan Wilder**, Sze-Chuan Suen, and Milind Tambe. Preventing infectious disease in dynamic populations under uncertainty. AAAI Conference on Artificial Intelligence (AAAI). 2018.

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**Bryan Wilder.** Equilibrium computation and robust optimization in zero sum games with submodular structure. AAAI Conference on Artificial Intelligence (AAAI). 2018.

**Bryan Wilder.** Risk-sensitive submodular optimization. AAAI Conference on Artificial Intelligence (AAAI). 2018.

**Bryan Wilder,** Nicole Immorlica, Eric Rice, and Milind Tambe. Maximizing influence in an unknown social network. AAAI Conference on Artificial Intelligence (AAAI). 2018.

**Bryan Wilder,** Amulya Yadav, Nicole Immorlica, Eric Rice and Milind Tambe. Uncharted but not Uninfluenced: Influence Maximization with an Uncertain Network. International Conference on Autonomous Agents and Multiagent Systems (AAMAS). 2017.

Amulya Yadav, **Bryan Wilder,** Robin Petering, Eric Rice and Milind Tambe. Influence Maximization in the Field: The Arduous Journey from Emerging to Deployed Application. International Conference on Autonomous Agents and Multiagent Systems (AAMAS). 2017. **Nominated for best paper award.**

Shahrazad Gholami, **Bryan Wilder,** Matthew Brown, Arunesh Sinha, Dana Thomas, Nicole Sintov, Milind Tambe. Divide to Defend: Collusive Security Games. *Conference on Decision and Game Theory for Security (GameSec)*. 2016.

Shahrazad Gholami, **Bryan Wilder,** Matthew Brown, Arunesh Sinha, Dana Thomas, Nicole Sintov, Milind Tambe. Divide to Conquer: Toward Addressing Collusion among Human Adversaries in Security Games (short paper). *European Conference on Artificial Intelligence (ECAI)*. 2016.

**Bryan Wilder** and Gita Sukthankar. Sparsification of Social Networks Using Random Walks. *International Conference on Social Computation (SocialCom)*. 2015

## Journal publications

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Anne Kandler, **Bryan Wilder,** Laura Fortunato. Inferring individual-level processes from population-level patterns in cultural evolution. *Royal Society Open Science*. 2017.

**Bryan Wilder** and Anne Kandler. Inference of Transmission Modes Based on Incomplete Information. *Human Biology*. 2015.

**Bryan Wilder** and Kenneth O. Stanley. Reconciling Explanations for the Evolution of Evolvability. *Adaptive Behavior*. 2015.

**Bryan Wilder** and Kenneth O. Stanley. Altruists Proliferate Even When at a Selective Disadvantage Within their Own Niche. *PLOS One*. 2015.

## Workshop publications

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**Bryan Wilder,** Amulya Yadav, Nicole Immorlica, Eric Rice and Milind Tambe. Robust, dynamic influence maximization. International Workshop on Optimization in Multiagent Systems (OptMAS). 2017

Shahrazad Gholami, **Bryan Wilder,** Matthew Brown, Arunesh Sinha, Nicole Sintov, Milind Tambe. A Game Theoretic Approach on Addressing Cooperation among Adversaries in Security Games. *Security and Multi-agent Systems Workshop at AAMAS 2016*.

## Videos

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Amulya Yadav, Eric Rice, Robin Petering, Jaih Craddock, **Bryan Wilder**, Milind Tambe. HEALER: Using AI to Raise HIV Awareness among Homeless Youth. AAAI Conference on Artificial Intelligence (AAAI). 2016. **Best video award**.

## Grant proposals assisted with

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*Playing Security Games With No Time for Mapping Full Networks: Maximizing Influence in Uncharted Social Networks*, 2/1/2017-9/1/2017, approx. \$500,000; Army Research Office .

*Spatio-Temporal Game Theory and Real-Time Machine Learning for Adversarial Groups in the Wild*, 01/01/2017-12/31/2019, approx. \$1,250,000; Office of the Secretary of Defense MINERVA Research Initiative.

## Research experience

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<i>Teamcore Lab</i> , University of Southern California Develop algorithms for analyzing and intervening in social networks, and for planning defender responses in security games.	Fall 2015 – Present
<i>Research Experience for Undergraduates</i> , Santa Fe Institute Advised by Anne Kandler and Laura Fortunato. Developed statistical methods to infer the underlying mechanisms behind cultural evolution.	Summers 2013 – 2015
<i>Honors in the Major Undergraduate Thesis</i> , University of Central Florida. Advised by Gita Sukthankar. Designed an algorithm to sparsify social networks, with applications to large-scale influence maximization.	Fall 2014 – Spring 2015
<i>Evolutionary Complexity Lab</i> , University of Central Florida Analyzed novel hypothesis for the evolution of altruism with analytic mathematical model and computational simulation.	Fall 2013 – Spring 2014
<i>Intelligent Systems Lab</i> , University of Central Florida Designed episodic memory for a conversational avatar, leading to an exhibit developed for Orlando Science Center.	Fall 2012 – Spring 2013

## Students Mentored

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Noah Foreman (B.S. student, USC). Summer 2017. Project: simulating models of influence diffusion on social networks and examining impact of model misspecification on influence maximization algorithms.

## Professional Service

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Organizing Committee: AAAI 2017 Spring Symposium on AI for Social Good (AISOC).

Reviewer: AAMAS 2018, AAAI 2018, IJCAI 2017, 2016, GameSec 2016, NIPS 2016

## Teaching Experience

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*Graduate Teaching Assistant*, University of Southern California.  
CSCI 170: Discrete Methods in Computer Science.

Spring 2018

*Graduate Teaching Assistant*, University of Southern California.  
CSCI 104: Object Oriented Programming and Data Structures.

Summer 2017

*Undergraduate Teaching Assistant*, University of Central Florida  
CAP 4053: Artificial Intelligence for Game Programming

Spring 2014

## General audience publications

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*Resident Staff Writer*, The Undergraduate Times

Wrote monthly articles on current scientific research for general student audience.  
Site averages 5,000 visitors daily.

Fall 2014 – Spring 2015