
Nicholas M. Stiffler

Assistant Professor

Department of Computer Science
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EDUCATION

- University of South Carolina**, Columbia, SC 2012 – 2016
Ph.D. in Computer Science and Engineering
Dissertation: Visibility-Based Pursuit-Evasion in the Plane
Dissertation Advisor: Professor Jason M. O’Kane
- University of South Carolina**, Columbia, SC 2009 – 2012
M.S. in Computer Science and Engineering
Thesis: Visibility-Based Pursuit-Evasion with Probabilistic Evader Models
Thesis Advisor: Professor Jason M. O’Kane
- University of South Carolina**, Columbia, SC 2006 – 2009
B.S. in Computer Engineering, *Magna Cum Laude*
Outstanding Senior in Computer Engineering (2009)

PROFESSIONAL EXPERIENCE

- University of Dayton**
Assistant Professor Aug. 2021 – current
Department of Computer Science, College of Arts and Sciences
- University of South Carolina, Columbia**
Post-Doctoral Researcher : Research Information Technology Manager Jan. 2018 – Aug 2021
College of Engineering and Computing
- Rutgers, The State University of New Jersey**
Post-Doctoral Researcher Jan. 2017 – Jan. 2018
Computer Science Department, School of Arts and Sciences
- University of South Carolina, Columbia**
Instructor May 2016 – Dec. 2016
Computer Science & Engineering Department, College of Engineering and Computing
- University of South Carolina, Columbia**
Graduate Instructor/Research Assistant Aug. 2009 – May 2016
Computer Science & Engineering Department, College of Engineering and Computing

HONORS & AWARDS

- 2017 **Robotics: Science and Systems: Best Student Paper Award finalist**
for “High-Quality Tabletop Rearrangement with Overhand Grasps: Hardness Results and Fast Methods”
- 2016 **Outstanding Graduate Instructor Award**
presented on behalf of the Department of Computer Science & Engineering, University of South Carolina
- 2014 **Runner-up in the 3rd annual Gamecock Computing Research Symposium**
presented on behalf of the Department of Computer Science & Engineering, University of South Carolina
- 2013 **Special Recognition Scholarship Award**
Upsilon Pi Epsilon, International Honor Society for The Computing and Information Disciplines
- 2012 **Palmetto Pillar Award - Student Achievement**
presented by the Greater Columbia Chamber of Commerce Information Technology Council
- 2012 **Runner-up in the 1st annual Gamecock Computing Research Symposium**
presented on behalf of the Department of Computer Science & Engineering, University of South Carolina

COURSES TAUGHT

Course	Title	University	Year	Students	Instructor Rating*
CPS 242 (U)	Web Application Development	University of Dayton	Fall 2021	14	
CPS 499 (U) CPS 592 (G)	Topics: Introduction to Robotics	University of Dayton	Fall 2021	24	
CSCE 274 (U)	Robotic Applications and Design	University of South Carolina	Fall 2015 Fall 2014	58 34	4.81*/5.00 4.85 /5.00
CSCE 215 (U)	Unix/Linux Fundamentals	University of South Carolina	Jan 2016 May 2015	54 27	–/5.00 –/5.00
CSCE 201 (U)	Introduction to Security	University of South Carolina	Fall 2016 Sum 2016	65 6	4.86*/5.00 –/5.00
CSCE 145 (U)	Algorithmic Design I	University of South Carolina	Fall 2016	160	4.52 /5.00

* – Ratings for multiple sections taught during the same semester are averaged.

PUBLICATIONS

Journal articles

- [J:03] Shuai D. Han, Nicholas M. Stiffler Athanasios Krontiris, Kostas E. Bekris, and Jingjin Yu. [Complexity Results and Fast Methods for Optimal Tabletop Rearrangement with Overhand Grasps](#). *International Journal of Robotics Research*, OnlineFirst, July 2018.
- [J:02] Shuai D. Han, Nicholas M. Stiffler, Kostas E. Bekris, and Jingjin Yu. [Efficient, High-Quality Stack Rearrangement](#). *IEEE Robotics and Automation Letters*, 3, 2018. [Also accepted to appear at the *Proc. IEEE International Conference on Robotics and Automation* 2018]
- [J:01] Nicholas M. Stiffler, Jason M. O’Kane. [Complete and Optimal Visibility-Based Pursuit-Evasion](#). *International Journal of Robotics Research*, 36:923–946, July 2017.

Conference submission under review

- [U:01] Trevor Olsen, Nicholas M. Stiffler, Jason M. O’Kane. Robust-by-Design Plans for Multi-Robot Pursuit-Evasion. Under review.

Refereed conference papers

- [C:11] Trevor Olsen, Nicholas M. Stiffler, Jason M. O’Kane. Rapid Recovery from Robot Failures in Multi-Robot Visibility-Based Pursuit-Evasion. To appear in *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Prague, Czech Republic, October 2021.
- [C:10] Trevor Olsen, Anne Tumlin, Nicholas M. Stiffler, Jason M. O’Kane. A visibility roadmap sampling approach for a multi-robot visibility-based pursuit-evasion problem. In *Proc. IEEE International Conference on Robotics and Automation*, Xi’an, China, June 2021.

- [C:09] Nicholas M. Stiffler, Jason M. O’Kane. [Planning for robust visibility-based pursuit-evasion](#). In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, Las Vegas, Nevada, U.S.A., October 2020.
- [C:08] Shuai D. Han, Nicholas M. Stiffler, Athanasios Krontiris, Kostas E. Bekris, and Jingjin Yu. [High-Quality Tabletop Rearrangement with Overhand Grasps: Hardness Results and Fast Methods](#). In *Proc. Robotics: Science and Systems*, Boston, Massachusetts, U.S.A., July 2017.
Nominated for “Best Student Paper”.
- [C:07] Nicholas M. Stiffler, Andreas Kolling, Jason M. O’Kane. [Persistent Pursuit-Evasion: The Case of the Preoccupied Pursuer](#). In *Proc. IEEE International Conference on Robotics and Automation*, pages 5027–5034, 2017.
- [C:06] Nicholas M. Stiffler, Jason M. O’Kane. [Pursuit-Evasion with Fixed Beams](#). In *Proc. IEEE International Conference on Robotics and Automation*, pages 4251–4258, 2016.
- [C:05] Nicholas M. Stiffler, Jason M. O’Kane. [Agent Classification using Implicit Models](#). In *Proc. IEEE International Conference on Robotics and Automation*, pages 3435–3442, 2015.
- [C:04] Nicholas M. Stiffler, Jason M. O’Kane. [A Sampling Based Algorithm for Multi-Robot Visibility-Based Pursuit-Evasion](#). In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 1782–1789, 2014.
- [C:03] Nicholas M. Stiffler, Jason M. O’Kane. [A Complete Algorithm for Visibility-Based Pursuit-Evasion with Multiple Pursuers](#). In *Proc. IEEE International Conference on Robotics and Automation*, ages 1660–1667, 2014.
- [C:02] Nicholas M. Stiffler, Jason M. O’Kane. [Shortest Paths for Visibility-Based Pursuit-Evasion](#). In *Proc. IEEE International Conference on Robotics and Automation*, pages 3997–4002, 2012.
- [C:01] Nicholas M. Stiffler, Jason M. O’Kane. [Visibility-Based Pursuit-Evasion with Probabilistic Evader Models](#). In *Proc. IEEE International Conference on Robotics and Automation*, pages 4254–4259, 2011.

M.S. thesis and Ph.D. dissertation

- [PhD] Nicholas M. Stiffler. *Visibility-Based Pursuit-Evasion in the Plane*. Ph.D. thesis. University of South Carolina, 2016.
- [MS] Nicholas M. Stiffler. *Visibility-Based Pursuit-Evasion with Probabilistic Evader Models*. Master’s thesis. University of South Carolina, 2012.

Lightly-reviewed publications

- [O:01] Shuai D. Han, Nicholas M. Stiffler, Kostas E. Bekris, Jingjin Yu. *Rearranging Multiple Objects on Stacks: bounds and efficient algorithms*. Extended abstract. In *Proc. International Symposium on Multi-Robot and Multi-Agent Systems*, 2017.

PRESENTATIONS

Seminars and Colloquia at Universities

- “Combinatorial Challenges in Robotics: From Target Tracking to Manipulation,” University of Nebraska-Lincoln, Jan 23, 2020.
- “Combinatorial Challenges in Robotics: From Target Tracking to Manipulation,” West Virginia University, May 21, 2019.
- “Visibility-based Pursuit-Evasion in the Plane,” Rutgers, The State University of New Jersey, DIMACS: CCICADA Seminar Series in Homeland Security , January 26, 2017.
- “Complete and Optimal Visibility-Based Pursuit-Evasion,” Florida International University, Department of Computer Science, October 16, 2016.
- “Visibility-Based Pursuit-Evasion in the Plane,” Rutgers, The State University of New Jersey, Department of Computer Science, February 08, 2016.
- “Visibility-Based Pursuit-Evasion in the Plane,” University of South Carolina, Department of Computer Science and Engineering, February 06, 2016.
- “Visibility-Based Pursuit-Evasion with Probabilistic Evader Models,” University of Illinois at Urbana-Champaign, Department of Computer Science, March 11, 2011.

Academic Conferences

- IEEE/RSJ International Conference on Intelligent Robots and Systems (2020) held in Las Vegas, Nevada, USA. (*Virtual*)
- IEEE International Conference on Robotics and Automation (2020) held in Paris, France. (*Virtual*)
- International Symposium on Multi-Robot and Multi-Agent Systems (2017) held in Los Angeles, California, USA.
- Robotics: Science and Systems (2017) held in Boston, Massachusetts, USA.
- IEEE International Conference on Robotics and Automation (2016) held in Stockholm, Sweden.
- IEEE International Conference on Robotics and Automation (2015) held in Seattle, Washington, USA.
- IEEE/RSJ International Conference on Intelligent Robots and Systems (2014) held in Chicago, Illinois, USA.
- IEEE International Conference on Robotics and Automation (2012) held in St. Paul, Minnesota, USA.
- IEEE International Conference on Robotics and Automation (2011) held in Shanghai, China.

SERVICE

Outreach

- High Schools** - Spring Valley H.S. (2011-2013, 2015, 2018, 2019).
- Middle Schools** - Longleaf M.S. (2012), Summit Parkway M.S. (2012).
- Elementary Schools** - North Springs E.S. (2010)
- Robotics Exhibit at Edventure Children’s Museum (2010)
- University of South Carolina E-week open house (2010-2012, 2014-15)
- Robotics presentation for the Time Warner Cable STEM Education Channel (2012)

Professional service

- Associate Editor, IROS, Conference Editorial Board, 2017, 2018, 2019, 2020.

Reviews

Conferences

- IEEE International Conference of Robotics and Automation.
- IEEE/RSJ International Conference on Intelligent Robots and Systems.
- IEEE International Symposium on Multi-Robot and Multi-Agent Systems.
- International Conference on Ubiquitous Robots.
- International Workshop on Robot Motion and Control.

Journals

Autonomous Robots.
Frontiers in Robotics and AI.
IEEE Access.
IEEE Robotics and Automation Letters (RA-L).
IEEE Transactions on Robotics.
IEEE Transactions on Automation Science and Engineering.
IEEE Transactions on Industrial Electronics.
International Journal of Automation and Computing.
International Journal of Computational Geometry and Applications.
International Journal of Robotics Research.
Paladyn Journal of Behavioral Robotics.
Robotics.

SOCIETY MEMBERSHIP

Honor society membership

National Society of Collegiate Scholars, 2007
Tau Beta Pi, 2009
Upsilon Pi Epsilon, 2013
Delta Epsilon Iota, 2013
Golden Key International Honor Society, 2014

Professional society membership

Association for Computing Machinery, 2008 - present.
Institute of Electrical and Electronics Engineers (IEEE), 2010 - present.
Member, 2016-present.
Student member, 2010-2016.
IEEE Robotics and Automation Society (RAS), 2011 - present.
Technical Committees: Algorithms for Planning and Control of Robot Motion; Multi-Robot Systems; Safety, Security, and Rescue Robotics
Association for the Advancement of Artificial Intelligence (AAAI), 2013 - present.

CITIZENSHIP

United States