

Victoria Manfredi

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Submission Date: September 24, 2023

Professional Experience

- Assistant Professor of Computer Science** *July 2016 to Present*
Wesleyan University, Middletown, Connecticut, USA
- Assistant Professor, Integrative Science** *November 2022 to Present*
Wesleyan University, Middletown, Connecticut, USA
- Visiting Professor, Dept of ECE** *September 2019 to May 2020*
McGill University, Montréal, Québec, Canada
- Scientist II** *October 2015 to May 2016*
Raytheon BBN Technologies, Cambridge, Massachusetts, USA
- Scientist I** *October 2011 to October 2015*
Raytheon BBN Technologies, Cambridge, Massachusetts, USA
- Computing Innovation Fellow** *September 2009 to September 2011*
Boston University, Boston, Massachusetts, USA. Mentor: Mark Crovella
- Visiting Researcher** *January 2007 to June 2007*
École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

Education

- Ph.D.** Computer Science, University of Massachusetts Amherst *September 2009*
Advisor: Jim Kurose. Title: Sensor Control and Scheduling Strategies for Sensor Networks
- M.S.** Computer Science, University of Massachusetts Amherst *May 2005*
- B.A.** Computer Science, Neuroscience, Smith College *May 2002*
magna cum laude with highest honors in computer science

Papers Under Submission

* Indicates Wesleyan undergraduate student

Multicopy Reinforcement Learning Agents

Alicia P. Wolfe, Oliver Diamond*, Remi Feuerman*, Magdalena Kisielinska*, Brigitte Goeler-Slough*, *V. Manfredi*, 2023, 11 pages.
<https://arxiv.org/pdf/2309.10908.pdf>

Learning an Adaptive Forwarding Strategy for Mobile Wireless Networks: Resource Usage vs. Latency

V. Manfredi, Alicia P. Wolfe, Xiaolan Zhang, Bing Wang, 2023, 39 pages.
Extended version of NeurIPS RL4RealLife workshop paper.
<https://arxiv.org/abs/2207.11386v2>

Dynamic Routing for Quantum Key Distribution Networks

Omar Amer, Walter O. Krawec, *V. Manfredi*, Bing Wang, 2022, 23 pages.
<https://doi.org/10.48550/arXiv.2212.03144>

Refereed Publications

* Indicates Wesleyan undergraduate student

- [17] **Learning an Adaptive Forwarding Strategy for Mobile Wireless Networks: Resource Usage vs. Latency** V. Manfredi, Alicia P. Wolfe, Xiaolan Zhang, Bing Wang. In *Reinforcement Learning for Real Life (RL4RealLife) Workshop in the 36th Conference on Neural Information Processing Systems (NeurIPS)*, 2022, 9 pages.
(Acceptance rate: $26/32 = 81.3\%$)
<https://sites.google.com/view/rl4reallife/>
- [16] **Quantifying Unlinkability in Multi-hop Wireless Networks**
V. Manfredi, Cameron Donnay Hill. In *Special Issue of Elsevier Computer Communications (COMCOM) dedicated to MSWiM 2021*, Volume 181, Issue C, 2022, pp. 32-44.
(Journal Impact IF: 5.047)
<https://doi.org/10.1016/j.comcom.2021.09.022>
- [15] **Relational Deep Reinforcement Learning for Routing in Wireless Networks**
V. Manfredi, Alicia P. Wolfe, Bing Wang, Xiaolan Zhang. In Proc. of *IEEE International Symposium on a World of Wireless, Mobile, and Multimedia Networks (WoWMoM)*, 2021, pp. 159-168.
(Acceptance rate: $22/113 = 19.5\%$)
<https://doi.org/10.1109/WoWMoM51794.2021.00029>
- [14] **Quantifying Unlinkability in Multi-hop Wireless Networks**
V. Manfredi, Cameron Donnay Hill. In Proc. of *International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM)*, 2020, pp. 73-82.
(Acceptance rate: $24/96 = 25\%$)
<https://doi.org/10.1145/3416010.3423216>
- [13] **MultiFlow: Cross-Connection Decoy Routing using TLS 1.3 Session Resumption**
V. Manfredi, Pi Songkuntham*. In Proc. of *8th USENIX Workshop on Free and Open Communications on the Internet (FOCI)*, 2018, 7 pages.
(Acceptance rate: $11/28 = 39.3\%$)
<https://www.usenix.org/conference/foci18/presentation/manfredi>
- [12] **SHARE: Scalable Hybrid Adaptive Routing for dynamic multi-hop Environments**
V. Manfredi, Will Nii Tetteh, Ram Ramanathan, Regina Hain, Dorene Ryder. In Proc. of *IEEE Conference on Ubiquitous Intelligence and Computing (UIC)*, 2017, pp. 1-8.
Awarded Best Industry Paper
(Acceptance rate: $42/129 = 32.6\%$)
<https://doi.org/10.1109/UIC-ATC.2017.8397491>
- [11] **Rebound: Decoy Routing on Asymmetric Routes Via Error Messages**
Daniel Ellard, Christine Jones, V. Manfredi, W. Timothy Strayer, Bishal Thapa, Megan Van Welie, Alden Jackson. In Proc. of *IEEE Local Computer Networks Conference (LCN)*, 2015, pp. 91-99.
(Acceptance rate: $44/145 = 30.3\%$)
<https://doi.org/10.1109/LCN.2015.7366287>
- [10] **Scalability Analysis of Grid-Based Multi-Hop Wireless Networks**
Rahul Urgaonkar, V. Manfredi, Ram Ramanathan. In Proc. of *International Conference on COMMunication Systems and NETWORKS (COMSNETS)*, 2013, pp. 1-10.
(Acceptance rate: $38/144 = 26.4\%$)

<https://doi.org/10.1109/COMSNETS.2013.6465577>

- [9] **Understanding Stateful vs. Stateless Communication Strategies for Ad hoc Networks**
V. Manfredi, Mark Crovella, Jim Kurose. In Proc. of *International Conference on Mobile Computing and Networking (MobiCom)*, 2011, pp. 313-324.
(Acceptance rate: $29/214 = 13.6\%$)
<https://doi.org/10.1145/2030613.2030649>
- [8] **Separation of Sensor Control and Data in Closed-Loop Sensor Networks**
V. Manfredi, Jim Kurose, Naceur Malouch, Chun Zhang, Michael Zink. In Proc. of *IEEE Conference on Sensor, Mesh and Ad hoc Communications and Networks (SECON)*, 2009, pp. 1-9.
(Acceptance rate: $96/437 = 22\%$)
<https://doi.org/10.1109/SAHCN.2009.5168970>
- [7] **Robust Routing in Dynamic MANETS**
V. Manfredi, Robert Hancock, Jim Kurose. In Proc. of *Annual Conference of the International Technology Alliance (ACITA)*, 2008, 8 pages.
<https://www.roke.co.uk/media/tq3amiyx/acita-2008-pdf.pdf>
- [6] **Scan Strategies for Adaptive Meteorological Radars**
V. Manfredi, Jim Kurose. In Proc. of *Neural Information Processing Systems (NeurIPS)*, 2007, pp. 993-1000.
<https://proceedings.neurips.cc/paper/2007/hash/0bb4aec1710521c12ee76289d9440817-Abstract.html>
- [5] **Switching Kalman Filters for Prediction and Tracking in an Adaptive Meteorological Sensing Network**
V. Manfredi, Sridhar Mahadevan, Jim Kurose. In Proc. of *IEEE Conference on Sensor, Mesh and Ad hoc Communications and Networks (SECON)*, 2005, pp. 197-206.
(Acceptance rate: $55/203 = 27.1\%$)
<https://doi.org/10.1109/SAHCN.2005.1557075>
- [4] **Hierarchical Reinforcement Learning Using Graphical Models**
V. Manfredi, Sridhar Mahadevan. In Proc. of *ICML Workshop on Rich Representations for Reinforcement Learning*, 2005, 6 pages.
<https://lirias.kuleuven.be/retrieve/39036>
- [3] **Meteorological Command and Control: An End-to-end Architecture for a Hazardous Weather Detection Sensor Network**
Michael Zink, David Westbrook, Sherief Abdallah, Bryan Horling, Vijay Lakamraju, Eric Lyons, V. Manfredi, Jim Kurose, Kurt Hondl. In Proc. of *MobiSys Workshop on End-to-End, Sense-and-Respond Systems, Applications, and Services*, 2005, 6 pages.
<https://www.usenix.org/conference/eesr-05/meteorological-command-and-control-end-end-architecture-hazardous-weather>
- [2] **Learning Hierarchical Models of Activity**
Sarah Osentoski, V. Manfredi, Sridhar Mahadevan. In Proc. of *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2004, pp. 891-896.
(Acceptance rate: $659/1192 = 55.3\%$)
<https://doi.org/10.1109/IROS.2004.1389465>
- [1] **Nonlinear Credit Assignment for Musical Sequences**
Judy Franklin, V. Manfredi. In Proc. of *International Workshop on Intelligent Systems Design*

and Applications (ISDA), 2002, pp. 245–250.
<https://dl.acm.org/doi/10.5555/774964.775004>

Awarded Funding

Research Experience for Undergraduates (REU) Supplement to National Science Foundation (NSF) grant, #CNS-2154190, Wesleyan amount is \$15,900. Summer 2023.

National Science Foundation (NSF) grant, #CNS-2154190: Hierarchical Deep Reinforcement Learning for Routing in Mobile Networks, Wesleyan amount is \$326,321 of \$599,336 total. PI: V. Manfredi, Co-PIs: Alicia P. Wolfe (Wesleyan University), Bing Wang (University of Connecticut), Dongjin Song (University of Connecticut). April 15, 2022 to March 31, 2025.

National Science Foundation (NSF) SBIR Phase I grant, #IIP-2136427: Scalable Mesh Routing to Augment Low-Power Wide Area IoT Networks, Wesleyan subaward is \$48,469 of \$229,723 total. PI: Ram Ramanathan (goTenna). PI for Wesleyan subaward and Deep Reinforcement Learning Lead: V. Manfredi. March 15, 2022 to December 15, 2022.

Office of Naval Research (ONR) contract: Probe-Observe-Knowledge-Engine (POKE), \$680k. PI: Karen Haigh. Technical lead for modeling engine: V. Manfredi. August 2015 to March 2016.

Defense Advanced Research Programs (DARPA) contract: Scalable Heterogeneous Adaptive Routing in contested Environments (SHARE), \$1.8M. PI: Ram Ramanathan. Technical lead for routing: V. Manfredi. August 2014 to 2016.

National Science Foundation (NSF) grant, #CNS-1117039: Understanding Communication Strategies for Ad hoc Networks, \$390,853. PI: Mark Crovella. Primary author of proposal: V. Manfredi. Grant included three years of postdoctoral funding for me, but I accepted a position at BBN instead. August 2011 to July 2014.

Honors

2019	Alternate, AAUW American Postdoctoral Fellowship (for funding sabbatical leave)
2017	Best Industry Paper at UIC 2017
2012-2016	Raytheon BBN Business Development Awards
2013	Part of 1st place team in Raytheon BBN-wide Business Development Initiative
2011-2012	Tomlinson Fellowship for Postdoctoral Research at McGill University (declined)
2009-2011	CCC/CRA Computing Innovation Fellowship for Postdoctoral Research
2006	NSF International Research and Education in Engineering Supplement
2003-2006	NSF Graduate Research Fellowship
2002	Smith College Alumnae Scholarship (for graduate study)
2002	Bert Mendelson Prize for Excellence in Computer Science, Smith College
2002	Phi Beta Kappa Honor Society inductee
2002	Sigma Xi Honor Society inductee
2000	Schultz Foundation Undergraduate Research Fellowship, Smith College
1998-2002	First Group Scholar (top 10% of class), Smith College

Patents

Destination address rewriting to block peer-to-peer communications. Inventors: Daniel Ellard, Alden Jackson, Christine Jones, Josh Karlin, *V. Manfredi*, David Mankins, Tim Strayer. United States 9,723,023. Issued August 2017.

Destination address control to limit unauthorized communications. Inventors: Daniel Ellard, Alden Jackson, Christine Jones, Josh Karlin, *V. Manfredi*, David Mankins, Tim Strayer. United States 9,237,027. Issued January 2016.

Talks and Outreach

Designing Robust and Adaptive Routing Strategies for Networks.

Keynote for IEEE WIE (Women in Engineering), IEEE Albuquerque Section Affinity Group, September 21, 2023. Host: Eirini Eleni Tsiropoulou, Aisha B. Rahman. (Virtual talk.)

How do Computers Communicate?

Wesleyan Girls In Science Summer Camp, August 9, 2023.

Making Decisions in Computer Networks Using Machine Learning.

Smith College, Northampton, Massachusetts, February 28, 2023. Host: Ileana Streinu.

Relational Deep Reinforcement Learning for Routing in Wireless Networks.

IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoW-MoM), June 9, 2021. (Virtual talk.)

Quantifying Unlinkability in Multi-hop Wireless Networks

International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM), Alicante, Spain, November 17, 2020. (Virtual talk.)

McGill University, Montréal, Québec, November 19, 2019. Host: Mark Coates.

Deep Reinforcement Learning for Communication in Wireless Networks.

Samsung Research, Montréal, Québec, April 1, 2020. Host: Xue Liu. (Virtual talk.)

Reinforcement Learning for Routing in Computer Networks, Guest lecture for COMP597.

McGill University, Montréal, Québec, February 19, 2020. Host: Xue Liu.

MultiFlow: Cross-Connection Decoy Routing using TLS 1.3 Session Resumption

8th USENIX Workshop on Free and Open Communications on the Internet (FOCI), Baltimore, Maryland. August, 2018.

SHARE: Scalable Hybrid Adaptive Routing for dynamic multi-hop Environments

IEEE Conference on Ubiquitous Intelligence and Computing (UIC), Fremont, California. August, 2017.

Decoy Routing on Asymmetric Routes Via Error Messages

University of Connecticut, Storrs, Connecticut, March 31, 2017. Host: Bing Wang.

McGill University, Montréal, Québec, January 13, 2017. Host: Mark Coates.

New England Networking and Systems Day, Boston, Massachusetts. October 19, 2015.

A Brief Tour of Network Science

REU Data Science Lunch Seminar, University of Massachusetts Amherst. July 9, 2015.

Raytheon BBN Technologies and Life After Grad School

Computer Science Women's Group, University of Massachusetts Amherst. April 22, 2015.

Rethinking Communication in Ad hoc Networks

University of Massachusetts Boston, Boston, Massachusetts. February 2014. Host: Duc Tran.

Understanding Stateful vs Stateless Communication Strategies for Ad hoc Networks

International Conference on Mobile Computing and Networking (MobiCom), Las Vegas, Nevada, September 2011.

Understanding Communication Strategies for Dynamic Networks

INRIA, Sophia Antipolis, France. Host: Giovanni Neglia, May 2011.

Choosing a Network Formation Strategy

Deutsche Telekom Laboratories, Berlin, Germany. Host: Ruben Merz, October 2010.

Robust Routing in Dynamic Networks

ETHZ, Zurich, Switzerland. Host: Bernhard Plattner, July 2009.

Boston University, Boston, Massachusetts. Host: Mark Crovella, June 2009.

Machine Learning and Friends Lunch, University of Massachusetts Amherst, February 2009.

Separation of Sensor Control and Data in Closed-Loop Sensor Networks

IEEE Conference on Sensor, Mesh and Ad hoc Communications and Networks (SECON), Rome Italy, June 2009.

Robust Routing in Dynamic MANETs

Annual Conference of the International Technology Alliance (ACITA), London, United Kingdom, September 2008.

Switching Kalman Filters for Prediction and Tracking in an Adaptive Meteorological Sensing Network

IEEE Conference on Sensor, Mesh and Ad hoc Communications and Networks (SECON), Santa Clara, California, September 2005.

Machine Learning and Friends Lunch, University of Massachusetts Amherst. October 2005.

Hierarchical Reinforcement Learning Using Graphical Models

ICML Workshop on Rich Representations for Reinforcement Learning, Bonn, Germany, August 2005.

Conference Organization

Workshops Co-Chair, *IEEE International Conference on Network Softwarization (NetSoft)*, St. Louis, Missouri, June 24-28, 2024.

Publicity Co-Chair, *IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WoWMoM)*, Perth, Australia, June 4-7, 2024.

Keynote Co-Chair, *Edge Computing and Wireless Networks (ENS) Workshop at IEEE International Conference on Network Softwarization (NetSoft)*, Madrid, Spain, June 23, 2023.

Workshops Co-Chair, *WoWMoM*, Cork, Ireland, June 15-18, 2020.

Posters and Demos Co-Chair, *IEEE International Conference on Sensing, Communication and Networking (SECON)*, Boston, MA, June 10-13, 2019.

Publication Co-Chair, *WoWMoM*, Washington, DC, June 9-12, 2019.

Publication Co-Chair, *WoWMoM*, Chania, Greece, June 12-15, 2018.

Publication Co-Chair, *WoWMoM*, Macau, China, June 12-15, 2017.

Publication Chair, *WoWMoM*, Coimbra, Portugal, June 21-24, 2016.

Publication Chair, *WoWMoM*, Boston, Massachusetts, June 14-17, 2015.

Technical Program Committee Chair, *International Workshop on Wireless Mesh and Ad-hoc Networking (WiMAN)*, Shanghai, China, August 7, 2014.

Technical Program Committees

IEEE ICC'24 - SAC-07 SN Track (2024 IEEE International Conference on Communications (ICC): SAC Social Networking Track), Denver, Colorado, June 9-13, 2024.

WoWMoM, Perth, Australia, June 4-7, 2024.

IEEE INFOCOM, Vancouver, British Columbia, Canada, May 20-23, 2024.

IFIP Networking, Barcelona, Spain, June 13-16, 2023.

WoWMoM, Boston, MA, June 12-15, 2023.
IFIP Networking, Catania, Italy, June 13-16, 2022.
WoWMoM, Belfast, UK, June 14-17, 2022.
AAAI Conference on Artificial Intelligence, Vancouver, British Columbia, Canada, February 22-March 1, 2022.
IFIP Networking, Helsinki, Finland, June 21-24, 2021.
WoWMoM, Pisa, Italy, June 7-11, 2021.
AAAI Conference on Artificial Intelligence, Virtual Event, February 2-9, 2021.
IFIP Networking, Paris, France, June 22-26, 2020.
IEEE Sarnoff Symposium, Princeton, NJ, September 23-24, 2019.
IFIP Networking, Warsaw, Poland, May 20-22, 2019.
IFIP Networking, Zurich, Switzerland, May 14-16, 2018.
IEEE International Conference on Ubiquitous Intelligence and Computing (UIC), San Francisco, August 4-8, 2017.
Workshop on Multimedia Streaming in Information-/Content-Centric Networks (MuSIC), Hong Kong, July 10, 2017.
WiMAN, Waikolo, Hawaii, August 4, 2016.
IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS), Algorithms and Performance Analysis Track, Washington, DC, May 26-28, 2016.
IEEE International Performance Computing and Communications Conference (IPCCC), Las Vegas, Nevada, December 9-11, 2016.
IEEE International Conference on Sustainable Computing and Communications (SustainCom), Atlanta, GA, October 8-10, 2016.
MuSIC, San Francisco, CA, April 11, 2016.
MASS Workshop on Content-Centric Networking (CCN), Dallas, Texas, October 19, 2015.
IEEE Vehicular Technology Conference (VTC) - Fall, Track on Ad hoc and Sensor Networks, Boston, Massachusetts, September 6-9, 2015.
IEEE International Military Communications Conference (MILCOM), Track 2, Tampa, Florida, October 26-28, 2015.
WoWMoM, Boston, Massachusetts, June 14-17, 2015.
MILCOM, Track 3, Baltimore, Maryland, October 6-8, 2014
International Conference on Computer Communication Networks (ICCCN), Track on Wireless LAN, Ad Hoc and Mesh Networks (WAM), Shanghai, China, August 4-7, 2014.
Internet Measurement Conference (IMC), Barcelona, Spain, October 23-24, 2013.
ICCCN, Track on Wireless LAN, Ad Hoc and Mesh Networks (LAMN), Munich, Germany, July 30 to August 2, 2012.
ICCCN, Network Algorithms and Performance Evaluation (NAPE), Maui, Hawaii, July 31 to August 4, 2011.

Funding Panels

Participant on panel to review grants for *NSF CISE*, 2023.
 Participant on panels to review grants for *NSF CISE*, 2022.
 Participant on panel to review grants for *NSF CISE*, 2021.
 Participant on panel to review grants for *NSF CISE*, 2014.

Participant on panel to review grants for *NSF CISE*, 2013.

Editorial Boards

July 2019 to Present. Editor, *Ad Hoc Networks*, Elsevier.

December 2016 to Present. Executive Editor, *Transactions on Emerging Telecommunications Technologies (ETT)*, Wiley.

External Reviewer

Conferences. *INFOCOM 2017, INFOCOM 2018.*

Journals. *Journal on Selected Areas in Communication, Wireless Networks, Transactions on Mobile Computing.*

Teaching Experience

COMP 211: Computer Science 1, Wesleyan University.

Instructor: Spring 2017 (with Norman Danner), Fall 2017, Spring 2019, Fall 2021, Fall 2022, Fall 2023

This is an undergraduate course that is the first core course required for the computer science major.

COMP 332: Computer Networks, Wesleyan University.

Instructor: Fall 2016 (as COMP 360), Spring 2018, Fall 2018, Spring 2023.

This is an undergraduate course providing an introduction to computer networks.

COMP 343: Machine Learning, Wesleyan University.

Instructor: Spring 2022.

This is an undergraduate course providing an introduction to machine learning.

COMPSCI 453: Computer Networking, University of Massachusetts Amherst.

Co-instructor: Fall 2008 (with John Ridgway).

This is an undergraduate course providing an introduction to computer networks. I gave 8 of 27 lectures, made up assignments and exam questions, and held office hours.

COMPSCI 689: Machine Learning, University of Massachusetts Amherst.

Teaching assistant: Fall 2004 (instructor was Sridhar Mahadevan).

This is a graduate course overviewing the field of machine learning. I graded homework and exams, and held office hours.

Post Doctoral Collaborators Supervised

Fall 2019-Present. *Alicia P. Wolfe.* Research on applying reinforcement learning techniques to routing problems in mobile wireless networks.

Undergraduate Honors Theses Supervised

Spring 2023. *Sam Feuer*, off-cycle thesis to be completed Fall 2023, Co-advised with Cameron Donay Hill.

COMP 410-08: Senior Thesis Tutorial.

Title: Routing Strategies for Unlinkable Communication in Wireless Networks.

Fall 2022, Spring 2023. *Jiaxuan Chen.*

COMP 409-07, COMP 410-08: Senior Thesis Tutorial.

Title: Characterizing Network Dynamics in Mobile Wireless Networks.

- Fall 2021, Spring 2022.** *Chunyue Ma*, Co-advised with Alicia P. Wolfe.
 COMP 409-07, COMP 410-08: Senior Thesis Tutorial.
 Title: Predicting Delay Features In Dynamically Changing Graphs Using Long Short-Term Memory Networks.
 Now: Software engineer at Amazon Web Services.
- Fall 2018.** *Pi Songunktham*, withdrew from tutorial due to personal reasons.
 COMP 409-07: Senior Thesis Tutorial.
 Title: Multiflow: Circumventing Internet Censorship via Cross-Connection Decoy Routing.
 Now: Software engineer at Google after Master's degree at Princeton University.

Undergraduate Research Advisees Supervised

- SFall 2023.** *Anan Afrida*.
 Funded by NSF grant #CNS-2154190.
 Topic: Feature prediction for mobile wireless networks using neural networks.
- Fall 2023.** *Haoran Xu*.
 Funded by NSF grant #CNS-2154190.
 Topic: Feature prediction for mobile wireless networks using neural networks.
- Summer 2023.** *Yehrim Hwang*.
 Funded by REU supplement to NSF grant #CNS-2154190.
 Topic: Feature prediction for mobile wireless networks using neural networks.
- Summer 2023.** *Jadyn George*.
 Funded by REU supplement to NSF grant #CNS-2154190.
 Topic: Distributed estimation of features for mobile wireless networks.
- Summer 2023.** *Melat Gebremeskel*.
 Funded by NSF grant #CNS-2154190.
 Topic: Distributed estimation of features for mobile wireless networks.
- Summer 2023.** *Sydney Keller*.
 Funded by NSF grant #CNS-2154190.
 Topic: Visualization of learned routing strategy for mobile wireless networks.
- Summer 2023.** *Miles Henle*.
 Funded by Wesleyan's CIS Research in the Sciences Program.
 Topic: Circumventing Internet censorship using chat bots.
- Spring 2023.** *Anan Afrida*.
 Funded by NSF grant #CNS-2154190.
 Topic: Feature estimation in mobile wireless networks.
- Spring 2023.** *Melat Amde Gebremeskel*.
 Funded by NSF grant #CNS-2154190.
 Topic: Estimating routing features for mobile wireless networks.
- Spring 2023.** *Haoran Xu*.
 Funded by NSF grant #CNS-2154190.
 Topic: Improving memory usage and computation efficiency in a network simulator.
- Fall 2022.** *Bryan Do*.
 Funded by NSF grant #IIP-2136427.
 Topic: Feature estimation in wireless networks.
- Summer 2022.** *Miles Henle*.
 Funded by NSF grant #IIP-2136427.
 Topic: Virtual machines, shell scripting, and cloud computing.
- Summer 2022.** *Oliver Diamond*. Co-advised with Alicia P. Wolfe.
 Funded by Wesleyan's CIS Research in the Sciences Program and by NSF grant #CNS-2154190.
 Topic: Multi-copy reinforcement learning agents.

- Spring 2022.** *Oliver Diamond.* Co-advised with Alicia P. Wolfe.
 COMP 424-06: Advanced Research Tutorial for Undergraduate student, 1 credit.
 Topic: Reinforcement learning for networking.
- Spring 2022.** *Carl Gross.* Co-advised with Alicia P. Wolfe.
 COMP 424-06: Advanced Research Tutorial for Undergraduate student, 1 credit.
 Topic: Deep neural networks for networking.
- Spring 2022.** *Miles Henle.*
 COMP 424-06: Advanced Research Seminar with Undergraduate student, 1 credit.
 Topic: Circumventing Internet censorship.
- Spring 2022.** *Kendall McDermott.*
 COMP 424-06: Advanced Research Seminar with Undergraduate student, 1 credit.
 Topic: Circumventing Internet censorship.
- Summer 2019.** *Chris Wang.*
 Funded out of Wesleyan start-up.
 Topic: Circumventing Internet censorship.
 Now: Security engineer at PayPal.
- Summer 2019.** *Naina Vig.*
 Funded out of Wesleyan start-up.
 Topic: Measures of anonymous communication.
 Now: Software engineer at Toast.
- Summer 2019.** *Tong Kong.*
 Funded by Wesleyan's CIS Research in the Sciences Program and out of Wesleyan start-up.
 Topic: Using Deep Neural Networks to Infer who is Talking to Whom in a Multi-Hop Wireless Network.
 Now: Software engineer at Google after Master's degree at University of Pennsylvania.
- Summer 2019.** *Yuan Sun.*
 Funded by Wesleyan's CIS Research in the Sciences Program and out of Wesleyan start-up.
 Topic: Using Recurrent Neural Networks to Analyze Anonymous Communication.
 Now: Software engineer at Amazon.
- Summer 2017.** *Pi Songkuntham.*
 Funded by Wesleyan's CIS Research in the Sciences Program and out of Wesleyan start-up.
 Topic: Multiflow: Circumventing Internet Censorship via Cross-Connection Decoy Routing.
- Spring 2017.** *Franchesca Peña.*
 COMP 424-06: Advanced Research Tutorial with Undergraduate student, 1 credit.
 Topic: Artificial intelligence and decision-making.
 Now: Site Manager, Mobile Tour at StoryCorps.

Undergraduate Student Tutorials and Independent Studies Supervised

- Spring 2023.** *Henry Carter.*
 COMP 468-02: Independent study with Undergraduate student, 1 credit.
 Topic: Computer networks.
- Fall 2022.** *Jiaxuan Chen, Jady George, Daniel Goldelman, Mohammad Hasib, Miles Henle, Roger Luo, Louis Melendez, Kendall McDermott, Jack Pacheco, Jocelyn Wang.*
 COMP 411-05: Group Tutorial with Undergraduate students, 1 credit.
 Topic: Computer networks.
- Fall 2021.** *Carl Gross,* Co-taught with Alicia Wolfe.
 COMP 401-04: Individual Tutorial with Undergraduate student, 1 credit.
 Topic: Deep neural networks for networking.

- Fall 2021.** *Dylan Abramson, Oliver Diamond, Nick Franczak, Phil Kaelbling, Theodore Sternlieb, Cisco Vielma, Ammie Wang, Jiner Zheng.*
 COMP 411-05, COMP 511-02: Group Tutorial with Undergraduate students and two Masters students, 1 credit.
 Topic: Machine learning.
- Spring 2019.** *Frederick Corpuz, Lex Liu, Tsun Lok Kwan, Winona Murphy, Elliot Williams, Christopher Wang.*
 COMP412-03, 512-02: Group Tutorial with Undergraduate students and one Masters student, 1 credit.
 Topic: Rust programming language.
- Spring 2019.** *Tong Kong, Yuan Sun.*
 COMP 412-03: Group Tutorial with Undergraduate students, 1 credit.
 Topic: Deep reinforcement learning.
- Spring 2018.** *Aqila Putri.*
 COMP 402-04: Individual Tutorial with Undergraduate student, 1 credit.
 Topic: Security protocols on the Internet.
- Spring 2018.** *Celine Tao.*
 COMP 402-04: Individual Tutorial with Undergraduate student, 1 credit.
 Topic: Computer networks.
- Spring 2018.** *Tomas Tucek.*
 COMP 402-04 Individual Tutorial with Undergraduate student, 1 credit.
 Topic: Measures of anonymous communication.
- Spring 2018.** *Caroline Liu.*
 COMP 402-04: Individual Tutorial with Undergraduate student, 0.5 credits.
 Topic: Routing protocols in the NS-3 simulator.
- Fall 2017.** *Fabien Bessez and Torie Davids.*
 COMP 411-05: Group Tutorial with Undergraduate students.
 1 credit for Fabien and 0.5 credits for Torie.
 Topic: Security protocols used on the Internet.
- Fall 2017.** *Caroline Liu.*
 COMP 401-04: Individual Tutorial with Undergraduate student, 0.5 credits.
 Topic: Routing protocols in flying ad hoc networks.
- Fall 2017.** *Samantha Ong.*
 COMP 401-04: Individual Tutorial with Undergraduate student, 1 credit.
 Topic: Machine learning methods with an emphasis on deep learning.
- Spring 2017.** *Pi Songkuntham.*
 COMP 402-04: Individual Tutorial with Undergraduate student, 1 credit.
 Topic: Privacy and anonymity on the Internet.

Reader for PhD Theses

- June 2022.** Thesis committee. *Alessio Sacco*, Politecnico di Torino, Italy. Advisors: Guido Marchetto, Flavio Esposito.
- June 2017.** External reviewer. *Shohreh Shaghaghian*, McGill University, Canada. Advisor: Mark Coates.

Reader for Masters Theses

- April 2022.** *Dylan Abramson*. Adviser: Kelly Thayer.

April 2022. *Theodore Sternlieb.* Adviser: Kelly Thayer.

Reader for Undergraduate Honors Theses

April 2023. *Nabeel Kemal.* Adviser: Kelly Thayer.

April 2023. *Oliver Diamond.* Adviser: Alicia P. Wolfe.

April 2019. *Han Yang Tay.* Advisers: Psyche Loui, Saray Shai.

April 2018. *Samantha Ong.* Adviser: Dan Licata.

April 2017. *Emily Black.* Adviser: Dan Licata.

April 2017. *Sam Stern.* Adviser: Danny Krizanc.

Wesleyan and Departmental Service

September 2021 to Present Department of Mathematics and Computer Science, Departmental Advisory Committee (DADCOM/CADCOM).

Fall 2022. Computer Science Faculty Search Committee.

Spring 2022. Computer Science Faculty Search Committee.

March 2019 to April 2019. Part of search committee for new ITS director of user services.

March 2018 to December 2018. Wesfiles Working Group.

Spring 2018. Computer Science Faculty Search Committee.

Spring 2017. Computer Science Faculty Search Committee.

September 2016 to May 2019 Department of Mathematics and Computer Science, Departmental Advisory Committee (DADCOM/CADCOM).

Wesleyan Outreach

Spring 2023. Natural Sciences and Mathematics (NSM) lunch talk. Title: Making Decisions in Computer Networks Using Machine Learning, April 14, 2023.

Spring 2022. Guest lecture, CIS 221: Research Frontiers in the Sciences, College of Integrative Sciences. Lecture title: Using Machine Learning to Make Decisions in Computer Networks, April 8, 2022.

Spring 2018. Natural Sciences and Mathematics (NSM) lunch talk. Title: Fighting Anti-Censorship on the Internet, March 30, 2018.

Fall 2016 to Fall 2019. Faculty mentor to Wesleyan Track & Field team via Athletics Partnering Program.

Fall 2016. Guest lecture, CIS 221: Research Frontiers in the Sciences, College of Integrative Sciences. Lecture title: A Brief Tour of Network Science, November 4, 2016.

Other Service

February 2017 to February 2019. Networking Networking Women (N2Women) Membership co-chair.

December 2014 to December 2015. Raytheon BBN Technologies, organization of Science Development Program Social Networks Seminar bringing in external speakers.

December 2012 to December 2014. Raytheon BBN Technologies, organization of Tech Talks seminar series for internal speakers in networking department.