

Robert Ryan McCune

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EDUCATION Graduate Certificate in Machine Learning, University of Washington, December 2025
Ph.D. Computer Science and Engineering, University of Notre Dame, May 2016
M.S. Computer Science and Engineering, University of Notre Dame, May 2014
B.S. Computer Science and Engineering, University of Notre Dame, May 2009

PROFESSIONAL EXPERIENCE Assistant Professor, California State Polytechnic University of Pomona, Pomona, CA, Sept 2016 - June 2018

- Dual appointment to the Computer Science and Center for Excellence in Math and Science Teaching (CEMaST) Departments

Research Intern, Cognitive Environments Lab at IBM T.J. Watson Research Center, Yorktown Heights, NY, May, Sept, and Oct 2015

Research Intern, Hardware Accelerators Group at IBM Zurich Research Lab, Zurich, Switzerland, June 2015 - Aug 2015

Trader Intern, Louis Dreyfus Commodities, Wilton, CT, June 2012 - Aug 2012

Simulation Engineer, Parsons Brinckerhoff, Newark, NJ, Oct 2009 - Aug 2011

Web Development Intern, Choice Lunch, San Ramon, CA, June 2009 - Sept 2009

Software Engineer Intern, PacStar Communications, Portland, OR, June 2008 - Aug 2008

HONORS AND AWARDS IBM PhD Fellowship, August 2015 - May 2016

GAANN Teaching Fellowship, Department of Education, May 2013 - May 2016

Indiana Chapter of Upsilon Pi Epsilon, Notre Dame Computer Science Honor Society, January 2012 - May 2016

Best Ph.D. Dissertation (Student Paper) at 2014 Spring Simulation Multi-Conference

PUBLICATIONS R. McCune, T. Weninger, and G. Madey, "Thinking Like a Vertex: a Survey of Vertex-Centric Frameworks for Large-Scale Distributed Graph Processing," *ACM Computing Surveys (CSUR)*, 48, 2, Article 25 (October 2015), 39 pages.

R. McCune and G. Madey, "Control of Artificial Swarms with DDDAS," in *Proceedings of the International Conference on Computational Science*. Cairnes, Australia, June 10-12, 2014.

R. McCune and G. Madey, "Decentralized K-Means Clustering with MANET Swarms,"

in *Proceedings of the Agent-Directed Simulation Symposium*. Tampa, FL, April 13-16, 2014.

R. McCune, Y. Wei, R. Purta, A. Madey, M. B. Blake, and G. Madey, "Investigations of DDDAS for Command and Control of UAV Swarms with Agent-Based Modeling," in *Proceedings of the Winter Simulation Conference*. Washington DC, December 8-11, 2013.

R. McCune and G. Madey, "Swarm Control of UAVs for Cooperative Hunting with DDDAS," in *Proceedings of the International Conference on Computational Science*. Barcelona, Spain, June 5-7, 2013.

R. McCune and G. Madey, "Agent-Based Simulation of Cooperative Hunting with UAVs," in *Proceedings of the Agent-Directed Simulation Symposium at the Spring Simulation Multi-Conference*. San Diego, CA, April 7-10, 2013.

G. Madey, M. B. Blake, C. Poellabauer, H. Lu, R. McCune, and Y. Wei, "Applying DDDAS Principles to Command, Control and Mission Planning for UAV Swarms," in *Proceedings of the International Conference on Computational Science*. Omaha, NE, June 4-6, 2012.

T. Schoenharl, Z. Zhai, R. McCune, A. Pawling, and G. Madey, "Design and Implementation of an Agent-Based Simulation for Emergency Response and Crisis Management," in *Proceedings of the Agent-Directed Simulation Symposium*. San Diego, CA, March 22-27, 2009.

TALKS

R. McCune, "Topics in Big Data Graph Processing," *Graph Analytics Group Seminar*. IBM Watson Research Center, Yorktown Heights, NY, October 29, 2015.

G. Madey and R. McCune, "Application of DDDAS Principles to the Command, Control and Mission Planning for UAV Swarms," *DDDAS Primary Investigator Meeting*. IBM Watson Research Center, Yorktown Heights, NY, December 1-3, 2014.

R. McCune, "Emergent Computing with Swarm Intelligent Systems," *Center for Advanced Modeling Graduate Workshop*. Johns Hopkins University, Baltimore, MD, July 10-11, 2014.

R. McCune, "Emergent Computing with Swarm Intelligent Systems," *SwarmFest Conference*. South Bend, IN, June 29 - July 1, 2014.

R. McCune, "Emergent Computing with Swarm Intelligent Systems," *Michigan Complexity Mini-Conference*. Ann Arbor, MI, May 9, 2014.

R. McCune, "Analysis of a Swarm Approach to Building Voronoi Diagrams," *SwarmFest Conference*. Orlando, FL, July 8-9, 2013.

Z. Zhai, T. Schoenharl, R. McCune, R. Bravo, A. Pawling, and G. Madey, "A GIS-Based Simulation for Emergency Response and Crisis Management," *GIS Day*. University of Notre Dame, November 21, 2008.

R. McCune, "An Agent-Based Simulation for Emergency Response Management," *SwarmFest Conference*. Chicago, IL, July 12-14, 2007.

**TECHNICAL
REPORTS**

R. McCune, "WIPER Documentation: How to Run the WIPER Simulation," *NSF Research Experience for Undergraduates (REU) Technical Report and Documentation*, September 2007.

SERVICE

Engineering College representative for the University of Notre Dame's Graduate Student Union Conference Presentation Grant Committee, June 2014 - May 2015

Co-Organizer of 18th Annual SwarmFest, 2014

Program Committee member for 2014 International Conference on Big Data Science and Computing, Stanford University, May 27-31, 2014.

Chaired 2 session for the Agent-Based Simulation track of the 2013 Winter Simulation Conference

- Concurrent and Parallel Modeling
- Model Development and Methods

Peer Reviewer for:

- The Journal of Simulation Modelling Practice and Theory
- Journal of Artificial Societies and Social Simulation
- Agent-Directed Simulation track of the Winter Simulation Conference
- International Conference of Computational Science
- Agent-Directed Simulation track of the Spring Simulation Multi-Conference

TEACHING

Assistant Professor, California State Polytechnic University of Pomona

- CS 130 Discrete Structures, Fall 2016
- CS 256 C++ Programming, Winter 2017
- CS 370 Parallel Processing, Spring 2017
- CS 599 Large-Scale Graph Processing, Fall 2017

Teaching Assistant, University of Notre Dame

- Healthcare Analytics, Spring 2015
- Research Seminar, Fall 2014
- Graduate Computer Architecture, Fall 2012
- Design and Analysis of Algorithms, Fall 2011

CONSULTING

NW Caliber, Clackamas, OR, July 2023

Visibiledi, Lake Oswego, OR, March 2022 - Sept 2022

Diamont Investments LLC, New York, NY, Sept 2015 - Oct 2015

TINYhr, Seattle, WA, Sept 2013