

Lawrence H. Erickson
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Education

University of Illinois at Urbana Champaign 2004-Present
BS in Computer Science, BA in East Asian Language and Culture - May 2008
MS in Computer Science - December 2012
Thesis title: *An Art Gallery Approach to Ensuring that Landmarks are Distinguishable*
PhD in Computer Science (in progress) - Expected graduation in May 2014
Advisor: Steven M. LaValle
Dissertation title: *Visibility Analysis of Landmark-Based Navigation*

Research Interests

Visibility and art gallery problems, minimum information requirements for robotics tasks, applications of graph theory and combinatorics to robotics.

Journal Publications

James Carraher, Ilkyoo Choi, Michelle Delcourt, Lawrence H. Erickson, Douglas B. West. *Locating a Robber on a Graph via Distance Queries*, Theoretical Computer Science, Vol. 463 (2012), p. 54–61.

Lawrence H. Erickson, Jingjin Yu, Yaonan Huang, Steven M. LaValle *Counting Moving Bodies Using Sparse Sensor Beams*, IEEE Transactions on Automation Science and Engineering, Vol. 10 (2013), No. 4, p. 853–861.

Conference Publications/Presentations

Lawrence H. Erickson, Joseph Knuth, Jason M. O’Kane, Steven M. LaValle. *Probabilistic Localization with a Blind Robot*, IEEE/RSJ International Conference on Robotics and Automation, 2008.

Lawrence H. Erickson, Steven M. LaValle. *Survivability: Measuring and Ensuring Path Diversity*, IEEE International Conference on Robotics and Automation, 2009.

Lawrence H. Erickson, Steven M. LaValle, *How many Landmark Colors are Needed to Avoid Confusion in a Polygon?*, IEEE International Conference on Robotics and Automation, 2011.

Lawrence H. Erickson, Steven M. LaValle *An Art Gallery Approach to Ensuring that Landmarks are Distinguishable*, Robotics: Science and Systems, 2011.

Lawrence H. Erickson, Steven M. LaValle *Navigation among Visually Connected Sets of Partially Distinguishable Guards*, IEEE International Conference on Robotics and Automation, 2012.

Lawrence H. Erickson, Jingjin Yu, Yaonan Huang, Steven M. LaValle *Counting Moving Bodies Using Sparse Sensor Beams*, Workshop on the Algorithmic Foundations of Robotics, 2012.

Lawrence H. Erickson, Steven M. LaValle. *Toward the Design and Analysis of Blind, Bouncing Robots*, IEEE International Conference on Robotics and Automation, 2013.

Lawrence H. Erickson, Steven M. LaValle. *A Simple, but NP-Hard, Motion Planning Problem*, AAAI Conference on Artificial Intelligence, 2013.

Workshop Presentations

James Carraher, Ilkyoo Choi, Michelle Delcourt, Lawrence H. Erickson, Douglas B. West. *Locating a Robber on a Graph via Distance Queries*, 5th Workshop on GRaph Searching, Theory and Applications (GRASTA), 2012.

Teaching Experience

Spring 2011 - TA for CS 373 (Theory of Computation). Named to the Spring 2011 List of Teachers Ranked Excellent by their Students. Received departmental "Outstanding Teaching Assistant" award.

Fellowships

Andrew and Shana Laursen Fellowship - 2008-2009

Conferences/Journals Reviewed

IEEE International Conference on Robotics and Automation [ICRA] (2009, 2010, 2011, 2012, 2013)
IEEE International Conference on Intelligent Robots and Systems [IROS] (2010, 2012)
IEEE Conference on Decision and Control [CDC] (2009)
IEEE Multiconference on Systems and Control [MSC] (2012)
International Conference on Distributed Computing in Sensor Systems [DCOSS] (2009)
ACM Symposium on Computational Geometry [SOCG] (2009)
Workshop on the Algorithmic Foundations of Robotics [WAFR] (2010, 2012)
Robotics: Science and Systems [RSS] (2011, 2012)
International Workshop on Robot Motion and Control [ROMOCO] (2009)
Symposium on the Theoretical Aspects of Computer Science [STACS] (2012)
IEEE Transactions on Robotics [TRO]
IEEE Transactions and Aerospace and Electronic Systems [TAES] Information and Computation

Other

Student reviewer of MS/PhD applications for entrance in 2012.
Graduate student mentor 2012-present.