

# Dustin Reishus

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## Education

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University of Southern California <i>Doctor of Philosophy in Computer Science</i> Advisor: Professor Leonard Adleman Dissertation: On the Mathematics of Self-Assembly	December 2009
University of Southern California <i>Master of Science in Computer Science</i>	December 2005
University of Southern California <i>Bachelor of Science in Computer Engineering and Computer Science</i>	May 2003
California Institute of Technology <i>Computing Beyond Silicon Summer School</i>	Summer 2002

## Research and Teaching Experience

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Computing Innovation postdoctoral research fellow Research topics include: Self-organizing distributed and swarm robotics, algorithms for self-organizing robotic systems	2010–present
Graduate research assistant Research topics include: Algebraic complex analysis, event-systems model of self-assembly, DNA self-assembly, self-assembled electronic circuits, stochastic chemical reaction networks	2003–2010
Undergraduate research assistant Research topics include: DNA computation, exquisite detection of small molecules, tile assembly model of self-assembly	2001–2003
Teaching assistant CS 303: Analysis of algorithms CS 571: Web technologies EE 327: Digital Electronics	Fall 2009 Fall 2009 Spring 2003

## Honors and Awards

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Computing Innovation Postdoctoral Fellowship	2010–2011
National Science Foundation (NSF) Graduate Research Fellowship	2004–2009
USC Trustee Scholarship	1999–2003
Engineering Honors Program	1999–2003
Upsilon Pi Epsilon (computer science honors organization)	2002
Tau Beta Pi (engineering honors organization)	2002
Eta Kappa Nu (electrical engineering honors organization)	2002
Resident Honors Program	1999–2000
Japan / US Senate International Scholarship	1999

## Journal Publications

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- [1] Leonard Adleman, Jarkko Kari, Lila Kari, Dustin Reishus, and Petr Sosik, *The undecidability of the infinite ribbon problem: Implications for computing by self-assembly*, SIAM Journal on Computing **38** (2009), no. 6, 2356–2381.
- [2] Yuriy Brun and Dustin Reishus, *Path finding in the tile assembly model*, Theoretical Computer Science. **410** (2009), no. 15, 1461–1472.
- [3] Dustin Reishus, Bilal Shaw, Yuriy Brun, Nickolas Chelyapov, and Leonard Adleman, *Self-assembly of DNA double-double crossover complexes into high-density, doubly connected, planar structures*, Journal of American Chemical Society (JACS) **127** (2005), no. 50, 17590–17591.
- [4] Nickolas Chelyapov, Yuriy Brun, Manoj Gopalkrishnan, Dustin Reishus, Bilal Shaw, and Leonard Adleman, *DNA triangles and self-assembled hexagonal tilings*, Journal of American Chemical Society (JACS) **126** (2004), no. 43, 13924–13925.

## Conference Publications

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- [1] David Doty, Matthew J. Patitz, Dustin Reishus, Robert T. Schweller, and Scott M. Summers, *Strong Fault-Tolerance for Self-Assembly with Fuzzy Temperature*, Proceedings of the 51st Symposium on Foundations of Computer Science (FOCS2010) (Las Vegas, NV, USA), 2010, pp. 417–426.
- [2] Yuriy Brun and Dustin Reishus, *Connecting the dots: Molecular machinery for distributed robotics*, Proceedings of the 14th International Meeting on DNA Computing (DNA08) (Prague, Czech Republic), June 2008, pp. 27–35.
- [3] Dustin Reishus, *Design of a self-assembled electronic memory circuit*, Proceedings of the 5th Foundations of Nanoscience: Self-Assembled Architectures and Devices (FNANO08) (Snowbird, UT, USA), April 2008, pp. 239–246.
- [4] Yuriy Brun, Manoj Gopalkrishnan, Dustin Reishus, Bilal Shaw, Nickolas Chelyapov, and Leonard Adleman, *Building blocks for DNA self-assembly*, Proceedings of the 1st Foundations of Nanoscience: Self-Assembled Architectures and Devices (FNANO04) (Snowbird, UT, USA), April 2004, pp. 2–15.
- [5] Leonard Adleman, Jarkko Kari, Lila Kari, and Dustin Reishus, *On the decidability of self-assembly of infinite ribbons*, Proceedings of the 43rd Symposium on Foundations of Computer Science (FOCS02) (Ottawa, Ontario, Canada), 2002, pp. 530–537.

## Unrefereed Publications

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- [1] Leonard Adleman, Manoj Gopalkrishnan, Ming-Deh Huang, Pablo Moisset, and Dustin Reishus, *On the Mathematics of the Law of Mass Action*, arXiv:0706.1234 [math.FA], October 2008.