Rachel A. Ward

RLM 10.144, Dept. of Mathematics and Institute for Computational Engineering and Sciences (ICES),
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Education

PHD IN APPLIED AND COMPUTATIONAL MATHEMATICS, Sept. 2009
Princeton University

BS IN MATHEMATICS, May 2005
University of Texas at Austin

Professional Experience

ASSOCIATE PROFESSOR Sept. 2016 -
University of Texas at Austin,
Department of Mathematics

ASSISTANT PROFESSOR Sept. 2011 -
University of Texas at Austin,
Department of Mathematics

NSF POSTDOCTORAL FELLOW 2009-2011
Courant Institute
New York University

RESEARCH ASSISTANT 2005-2009
Program for Applied and Computational Mathematics,
Princeton University
Advisor: Ingrid Daubechies

Research Interests

My research broadly lies in the area of *mathematical signal processing*; I develop sampling theorems and efficient reconstruction algorithms for data acquisition problems arising in machine learning and signal processing. Such analysis requires techniques and tools from different areas of applied mathematics, including harmonic analysis, convex optimization, probability, and statistics, as well as theoretical computer science.

Grants

Current Funding

NSF CAREER Award 7/01/13 - 6/30/18
Title: "Sparsity-aware sampling theorems and applications " Total award: $443,905

Previous Funding

Air Force Young Investigator Award (AFOSR YIP) # FA9550-13-1-0125	3/15/13 - 3/14/16
Title: "Reliable Function Approximation and Estimation"	Total award: $359,796
ICES Grand Challenge Faculty Award	9/01/15 - 1/01/16
	Total award: $75,000
Alfred P. Sloan Fellowship	3/15/12 - 3/15/14
	Total award: $50,000
DOD-Navy grant N00014-12-1-0743	6/15/12-07/01/15
Title: "Computer-enabled Hypothesis Testing: Algorithm and Theory"	Total award: $149,567

Awards and Honors

ICES Grand Challenge Faculty Award	Fall 2015
Invited Participant, Indonesian-American Kavli Frontiers of Science Symposium	2015
NSF CAREER Award (also listed under grants)	2013 - 2018
Alfred P. Sloan Fellowship	2012
Harrington Faculty Fellowship, UT Austin	2011-2012
NSF Mathematical Sciences Postdoctoral Research Fellowship	2009-2011
NSF Graduate Research Fellowship	2005-2008
Barry M. Goldwater Scholarship	2004-2005

Patents

US Patent No. $8,967,481$ "Symbol-based decoding of optical codes,"
(with Mark Iwen and Fadil Santosa), Issued March 3, 2015.

Consulting

Applied Research Laboratories, the University of Texas at Austin	2012 - 2013

Selected Invited Plenary Lectures

12th International Conference on Sampling Theory and Applications, Tallinn, Estonia, July 2017
Fifth International Conference on Continuous Optimization, Tokyo, Japan, August 2016
Time-Frequency Analysis and Related Topics, Strobl, Austria, June 2016
2nd International Matheon Conference "Compressed Sensing and its Applications,"
Berlin, Germany, December, 2015.
American Mathematical Society (AMS) Spring Central Sectional Meeting, Texas Tech University, April 2014.
Fifteenth Riviere-Fabes Symposium, Minneapolis, MN, April 2012.