John D. McKay

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Education

Graduate			
Pennsylvania State University	Electrical Engineering	Ph.D	2018 (Expected)
Arizona State University	Applied Mathematics	M.S.	2014
Undergraduate			
University of Pittsburgh	Pure Mathematics (3.8 GPA)	B.S.	2012
University of Pittsburgh	Africana Studies	B.S.	2012
GPA	3.7 (Magna Cum Laude)		

Publications

J. McKay, R. Raj, V. Monga, & J. Isaacs, "Discriminative Sparsity for Sonar ATR," *Oceans 2015 - MTS/IEEE Washington*, Washington, DC, 2015, pp. 1-6.

J. McKay, V. Monga, & R. Raj, "Localized Dictionary Design for Geometrically Robust Sonar ATR", *IGARSS*. 2016.

Current Research

- Adapting modern 2-D non-uniform FFT methods to synthetic aperture Sonar and Radar.
- Developing robust sparsity-based classification schemes for Sonar ATR.
- Designing network statistics to understand Twitter user group dynamics.

Teaching

Fall 2015	PSU	TA	EE 350, Continuous Linear Systems (2 sections)
Spring 2015	PSU	TA	EE 350, Continuous Linear Systems (2 sections)
Fall 2014	ASU	TA	MATH 270, Calculus 1 (3 sections)
Summer 2014	ASU	TA	J. Bustoz Math-Science Honors, Intro to Math Bio (1 section)
Spring 2014	ASU	TA	MATH 270, Calculus 1 (2 sections)
Summer 2013	ASU	TA	Mathematical and Theoretical Bio Institute
Fall 2010	Pitt	TA	MATH 0010, College Algebra 1 (2 sections)

Research Interests

Non-uniform FFTs | SAS/SAR | Sparse-Based Optimization | Convex Optimization | Network Analysis

Employment

2015	Washington, DC	**Pathways Research Intern**, Naval Research Laboratory -Developed coherent sparsely constrained Sonar ATR schemes
2012	Pittsburgh, PA	**Business Analyst I**, Management Science Associates -Developed & Managed Agent Based Modeling Projects -Conducted Mixed Marketing Models for CPG & Media Clients
2012	Pittsburgh, PA	**Market Analyst I**, Management Science Associates -Developed & Managed Agent Based Modeling Projects -Performed and Helped Design Statistical Twitter Segmentation
2011-12	Pittsburgh, PA	**Undergraduate RA**, Graduate School of Public Health (Pitt) -Applied an Agent Based Model Towards Vaccine Refusal
2011	Pittsburgh, PA	**Summer Research Fellow**, Modeling Infection Disease Agent Study - Developed an Agent Based Model for MRSA Epidemiology

Conferences

Localized Dictionary Design for Geometrically Robust Sonar ATR (Accepted, Poster)	IGARSS 2016	Beijing, China July 2016
Discriminative Sparsity for Sonar ATR	OCEANS 2016	Washington, DC Oct 2015
Antennation Networks & Division of Labor (Poster)	Nonlinear Dynamics and Stochastic Methods	Pittsburgh, PA March 2014
Emergent Antennation Patterns Among and Between *Pogonomyrmex californicus* Labor Divisions	Biomathematics and Ecology: Education and Research	Arlington, VA Oct 2013
Modeling Minority Group Influence On Larger Community Behavior: *Measles Vaccine Refusal & Ant Networks*	Atlantic Association for Research in the Mathematical Sciences Workshop	St. John's, Newfoundland July 2013
Multi-scale dynamical network of social insects and their labor division (Poster)	Society for Math Biology's Annual Conference	Tempe, AZ June 2013
Measles Vaccination Refusal and Its Effects on the Community	Society for Math Biology's Annual Conference	Knoxville, TN July 2012
Measles Vaccination Refusal and Its Effects on the Community	Third Mid-Atlantic Applied Mathematics Student Conference	Shippensburg, PA April 2012
Going Down Memory Lane: Students in the Diaspora Give Accounts of Educational Achievement Barriers and Challenges	Dubois-Nkrumah-Dunham International Conference	Pittsburgh, PA May 2009

Mentoring Experience

- Directing the research of ASU undergraduate mathematics student Christy Contras with biologist Dr. Susan Holechek to formulate an accurate epidemiological mathematical model of the rodent borne LCM virus which includes permanent asymptomatic infection.
- Participated in the Salt River Project at ASU helping tutoring Native American students in mathematics to advance their education and inspire future scientists.

Programming Languages

C++	R	Bash	Python
Java	Matlab	SAS (statistics)	LaTeX

Memberships

Society for Math Bio, Society for Industrial and Applied Math, IEEE