

# Curriculum Vitæ

# Katherine M. Kinnaird

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Brown University

Division of Applied Mathematics

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## EDUCATION

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### Dartmouth College

Ph.D., Mathematics June 2014

Thesis Title: *Aligned Hierarchies for Sequential Data*, Advisor: Scott D. Pauls

A.M., Mathematics June 2010

### Wellesley College

A.B., Mathematics with Departmental Honors May 2008

Massachusetts Institute of Technology - Cross-registered student Fall 2007

Budapest Semesters in Mathematics Fall 2006

## EMPLOYMENT

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Brown University - Data Sciences Postdoctoral Fellow July 2016 - Present

Affiliated to the Division of Applied Mathematics

Macalester College - Visiting Assistant Professor September 2014 - June 2016

## HONORS AND AWARDS

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### Awards

*Dartmouth College Graduate Teaching Award* June 2013

*Dartmouth College Graduate Community Service Award* May 2011

### Fellowship and Grant Support

*NSF GK-12 Fellowship as part of "Fostering Scientific Creativity by Building Connections and Improving Science Communication Skills" Project* July 2013 - June 2014

*Dartmouth College Graduate Fellowship* September 2008 - June 2013

### Travel Awards and Grants

*AMS Graduate Student Travel Grant* January 2014

*The Neukom Institute (of Dartmouth College) Travel Grant* January 2013, December 2013

*2013 Broadening Participation in Data Mining Travel Scholarship* August 2013

## PUBLICATIONS

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### Peer-Reviewed Publications -

*Aligned Hierarchies: A Multi-Scale Structure-Based Representation for Music-Based Data Streams.* - Appeared at the 17<sup>th</sup> International Society for Music Information Retrieval Conference, August 2016

### Preprints -

*Musically Meaningful Thresholds for Chroma-Based Audio Features* 2015

### In Preparation -

*Aligned sub-Hierarchies for Sequential Data*

*Aligned Hierarchies Toolbox: MATLAB implementation for creating aligned hierarchies and aligned sub-hierarchies for sequential data*

### Code Release -

*Thesis Code with License* - <https://github.com/kmkinnaird/ThesisCode/> October 2014

## TEACHING EXPERIENCE

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**Brown University** - Data Sciences Postdoctoral Fellow, Div. of Applied Math.

*What's the big deal with Data Science* - First Year Seminar (Fall 2016)

*Essential Statistics* (Spring 2017)

**Institute for Mathematics and Its Applications** - Math-to-Industry Bootcamp

*Python Instructor* (June 2016)

**Macalester College** - Visiting Assistant Professor, Dept. of Math, Statistics, & CS

*Core Concepts in Computer Science* (Fall 2014, Spring 2015, Fall 2015, Spring 2016)

*Introduction to Statistical Modeling* (Spring 2015, Fall 2015, Spring 2016)

**Dartmouth College** -

NSF GK-12 Fellow collaborating at Kimball Union Academy (July 2013 - June 2014)

Instructor

*Calculus of Functions of One and Several Variables* (Winter 2012)

*Calculus with Algebra* (Fall 2010)

Ethics Trainer (with Prof. Marcia J. Groszek)

*Professional Ethics Program for First-Year Graduate Students* (Fall 2011)

Teaching Assistant

*Topics in Applied Mathematics* (Winter 2013)

*Differential Equations* (Spring 2010)

*Calculus of Functions of One and Several Variables* (Spring 2009, Fall 2009)

*Introduction to Calculus* (Fall 2008)

## SELECTED PRESENTATIONS

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### Invited Conference & Workshop Talks -

*Seminar on music knowledge extraction using machine learning* December 2016

### Invited Seminar Talks -

*Dynamics Seminar* - Boston University September 2016

*Pattern Theory Seminar* - Brown University September 2016

*Data Science Seminar* - Institute for Mathematics and Its Applications April 2016

*MSCS Department Colloquium* - St. Olaf College April 2016

*Conversations About Our Scholarly Lives* - CST, Macalester College January 2016

*MCS Seminar* - Gustavus Adolphus College March 2015

*MSCS Department Seminar* - Macalester College March 2015

*MSCS Department Research Seminar* - St. Olaf College November 2014

*Mathematics Department Faculty Lunchtime Seminar* - Wellesley College April 2013

### Conference Talks -

*Joint Mathematics Meetings -*

AMS-MAA Special Session on Innovative Ideas in Enhancing Success  
in Mathematics Classes 2016

AMS Session on Probability Theory, Stochastic Processes, and Statistics 2016

MAA General Contributed Paper Session on Modeling or Applications 2015

AMS Session on Statistical Modeling, Big Data, and Computing 2014

AMS Session on Applied Mathematics and Modeling 2013

*Northeast Music Informatics Special Interest Group* - Boston, MA January 2013

### Poster Presentations -

*Poster Session at 17<sup>th</sup> ISMIR Conference* August 2016

*Poster Session at Workshop for Women In Machine Learning* December 2013-2015

*Project NExT/Young Mathematician's Network Poster Session at JMM* January 2013

## PROFESSIONAL ACTIVITIES

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**The Data Science TRAIIn Lab** - *Founder and PI* December 2014 - May 2016

### Conferences -

*International Society for Music Information Retrieval Conference* (2016) • *Joint Mathematics Meetings* (2013 - 2016) • *MAA MathFest* (2014 - 2016) • *Neural Information Processing Systems* (2012, 2013) • *ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (2013) • *Broadening Participation in Data Mining* (2013) • *Northeast Music Informatics Special Interest Group* (2012, 2013) • *International Conference on Machine Learning* (2012)

### Workshops -

*Seminar on music knowledge extraction using machine learning* (2016) • *Culture Analytics Long Program* at Institute for Pure and Applied Mathematics (2016) • *Workshop for Women In Machine Learning* (2012 - 2015) • *Music Hack Day NYC* (2013) • *HAMR-In-The-Woods* (2013) • *Broadening Participation in Data Mining* (2013) • *Music Hack Day at MIT* (2012) • *International Workshop on Music and Machine Learning* (2012) • *Women and Mathematics* at Institute for Advanced Study (2011) • *CRSI Workshop* (2009)

**Professional Development Activities -**

Project NExT Fellow - <i>Mathematical Association of America</i>	August 2015 - August 2016
Digital Liberal Arts, Faculty Learning Community - <i>Macalester</i>	Fall 2015
New Faculty Seminar - <i>Macalester College</i>	September 2014 - May 2015
Future Faculty Teaching Seminar - <i>Dartmouth College</i>	Summer 2013
Active Learning Institute (ALI) - <i>Dartmouth College</i>	August 31-September 1, 2011
Teaching Seminar - <i>Department of Mathematics, Dartmouth College</i>	Summer 2010

**SERVICE and MENTORING ACTIVITIES**

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**Service to Research Community -**

Workshop for Women In Machine Learning -	
<i>Executive Board President</i>	January 2016 - Present
<i>Executive Board Member</i>	January 2014 - Present
<i>Member of Organizing Team</i>	2013 Workshop
<i>Reviewer - Neural Information Processing Systems</i>	2015, 2016
<i>Co-Organizer - MAA North Central Section Spring Meeting</i>	2016
<i>Panelist - National Science Foundation</i>	2016
<i>Co-Organizer - The Early (Post-PhD) Years: An Interactive Survival Guide</i>	JMM 2016
<i>Reviewer - International Conference on Machine Learning</i>	2015
<i>Organizer - Graduate Student Seminar, Math Dept., Dartmouth</i>	June 2011- June 2012

**STEM Outreach - Dartmouth College**

<i>Activity Leader - Graduate Women in Science and Engineering Science Day</i>	April 2013
<i>Member of Organizing Team - Sonia Kovalevsky Math Day</i>	October 2012
<i>Workshop Leader - Sonia Kovalevsky Math Day</i>	November 2011
<i>Activity Leader - Johns Hopkins Center for Talented Youth Odyssey Series</i>	May 2010

**Community Service - Dartmouth College**

<i>Graduate Student Liaison - V-Day Campaign</i>	Winter 2009 - Winter 2014
<i>Activities Co-Chair - Executive Board, Graduate Student Council</i>	May 2009 - May 2011
<i>Activities Committee - Graduate Student Council</i>	October 2008 - May 2011

**Mentoring -**

<i>Presentation Advisor for Four Senior Capstone Projects - Macalester College</i>	Spring 2016
<i>Content Advisor for Capstone Project - Margaret Giesel, Macalester College</i>	Spring 2015
<i>Mentor - Women In Machine Learning Workshop</i>	2013, 2014
<i>Graduate Advisor - Office of Residential Life, Dartmouth College</i>	Fall 2009 - Spring 2012

**REFERENCES**

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Available upon request.