Jeff Poskin

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Mathematics Ph.D. interested in applying integer programming and optimization to problems in the aviation industry

PROFESSIONAL EXPERIENCE

Boeing Global Services - Jeppesen, Denver, Colorado

- Researcher with Research & Rapid Development — Jun 2017 – Present
  - Part of a global research team studying technical feasibility of new ideas and product concepts.
  - Contribute knowledge of optimization and machine learning to enhancing and designing new value additions for both current and new software solutions.
  - Responsible for building technical prototypes for internal customers.

EDUCATION

University of Wisconsin - Madison, Madison, Wisconsin

- Doctor of Philosophy (Ph.D.) in Mathematics — Aug 2011 – May 2017
  - Advisor: Professor Alberto Del Pia
  - Dissertation Topic: "Representability in Mixed Integer Quadratic Programming"
  - Research Areas: Integer Programming, Optimization, Real Algebraic Geometry

University of Kansas, Lawrence, Kansas

- Bachelor of Science (B.S.) in Mathematics — Aug 2008 – May 2011
  - Major GPA: 3.92 / 4.00

SKILLS

SOFTWARE

Experienced developing optimization models in Gurobi, CPLEX, AMPL, MATLAB, GAMS. Utilized various mathematical software systems Mathematica, Magma, Macaulay2, Sage during the course of research.

PROGRAMMING LANGUAGES

Experienced coding in Python, Julia, C#.

RESEARCH EXPERIENCE

University of Wisconsin - Madison, Madison, Wisconsin

- PhD Researcher — Aug 2011 – May 2017
  - Investigated representability results in mixed integer quadratic programming
  - Designed and analyzed computational complexity of algorithms in mixed integer nonlinear programming

University of Kansas, Lawrence, Kansas

- Undergraduate Researcher — May 2010 – Aug 2010
  - Supervisor: Atanas Stefanov
  - Research area: Functional Analysis

LEADERSHIP EXPERIENCE

Collaborative Undergraduate Research Lab, Madison, Wisconsin

- Undergraduate Mentor — May 2016 – Aug 2016
  - Mentored four undergraduate students in individual research projects focused in applied linear algebra
  - Designed individual projects for undergraduate research and led weekly group presentation meetings

TA Evaluation / TA Policy and Procedure Committee, Madison, Wisconsin

- Student Member — Aug 2014 – May 2015
  - Supervised new teaching assistants in the math department
  - Evaluated TA performance through review of end of semester student evaluations

TEACHING EXPERIENCE

Institute for Mathematics and its Applications, Minneapolis, Minnesota

- Optimization Short Course Teaching Assistant — Aug 2016
  - Selected as TA for a New Directions short course on Optimization
  - Managed daily problem sessions and presented solutions to a group of 30-40 participants

University of Wisconsin - Madison, Madison, Wisconsin

- Mathematics Department Teaching Assistant — Aug 2011 – May 2016

Led discussion sections, wrote and graded quizzes/homework and held office hours. Received 'Superior' TA evaluation (highest evaluation at UW-Madison) five different semesters.

- Course Assistant, Math 490: NSF sponsored CURL (Collaborative Undergraduate Research Lab); Spring 2016
- TA Coordinator, Math 221: Calculus I; Fall 2013, Fall 2014, Fall 2015
- TA, Math 341: Linear Algebra; Spring 2014, Spring 2015
- Lecturer, Math 131: Geometry and Measurement; Spring 2012, Summer 2014
- Lecturer, Math 130: Math for Teaching: Numbers and Operations; Fall 2012
- TA, Math 222: Calculus II; Fall 2011

TALKS

CONFERENCE TALKS

- **INFORMS 2016**, Nashville Tennessee, *Ellipsoidal Mixed-Integer Representability*, November 2016
- **IPCO 2016**, University of Liège, *On the Mixed Binary Representability of Ellipsoidal Regions*, June 2016
- **Applied Algebra Days 3**, University of Wisconsin - Madison, *Ellipsoidal Mixed-Integer Representability*, April 2016

UNIVERSITY OF WISCONSIN SEMINAR TALKS

- **Hilbert's Syzygy Theorem**, Graduate Algebraic Geometry Seminar, Srping 2013
- **Counting Lattice Points in Polytopes**, Graduate Singularities Seminar, Spring 2013
- **Wielandt's Automorphism Tower Theorem**, Group Theory Seminar, Fall 2012

OTHER CONFERENCES ATTENDED

- **New Directions Short Course: Mathematical Optimization**, Institute for Mathematics and its Applications, Minneapolis MN, August 2016
- **Summer School on Real Algebraic Geometry and Optimization**, Georgia Institute of Technology, Atlanta GA, July 2016
- **Mixed Integer Programming Workshop**, University of Miami, Coral Gables FL, May 2016
- **Macaulay2 Workshop**, Boise State University, Boise ID, May 2015
- **Mathematics of Communications: Sequences, Codes, and Designs**, Banff International Research Station, Banff Alberta, January 2015
- **Motivic Invariants and Singularities Thematic Program**, University of Notre Dame, South Bend IN, June 2013
- **Graduate Student Workshop on Moduli Spaces and Bridgeland Stability**, University of Illinois - Chicago, Chicago Il, March 2013
- **IMA Summer Graduate Student Program on Algebraic Geometry for Applications**, Georgia Institute of Technology, Atlanta GA, July 2012

PUBLICATIONS

ACCEPTED AND PUBLISHED PAPERS

[1] A. Del Pia and J. Poskin, "On the Mixed Binary Representability of Ellipsoidal Regions", in *Proceedings of IPCO 2016*, LNCS 9682 214-225 (2016).

[3] A. Del Pia and J. Poskin, "Ellipsoidal Mixed-Integer Representability", *Mathematical Programming, Series B*, online first (2017).

MANUSCRIPTS

[2] A. Del Pia and J. Poskin, "Mixed Binary Convex Quadratic Representable Sets", *submitted* (2017).

AWARDS AND HONORS

- Math Department TA Teaching Award, University of Wisconsin - Madison, Spring 2014
- University of Kansas, Charles H. Ashton Memorial - Wealthy Babcock Math Scholarship,
- First Place, 2011 Kansas Collegiate Mathematics Competition
- Putnam Competition: 2009 score: 30, 91st percentile; 2010 score: 40, 91st percentile

INTERESTS

Ultimate Frisbee, climbing, running.