Sam **Pine**

http://www.math.colostate.edu/~pine/
spine@rams.colostate.edu | 607.738.5683
Clearance: Secret, Current

RESEARCH INTERESTS

ACTIVE
3D Reconstruction of Radar Data

GENERAL
Synthetic Aperture Radar
Numerical Methods • Optimization
PDEs • Machine Learning

EDUCATION

COLORADO STATE UNIVERSITY
PhD Mathematics
Anticipated Summer 2018 | Fort Collins, CO

MS Mathematics
Applied and Computational
Fall 2016 | Fort Collins, CO

ELMIRA COLLEGE
BA Mathematics
June 2014 | Elmira, NY
BA Economics
June 2014 | Elmira, NY

COURSEWORK

GRADUATE
Computational Electromagnetics
Numerical Methods for PDEs
Numerical Linear Algebra
Probability Theory
Topics in Machine Learning
High Performance Computing

UNDERGRADUATE
Operations Analysis
Game Theory
Industrial Organization
Econometrics

SKILLS

PROGRAMMING
Familiar:
Julia • MATLAB • LaTeX
Seldom Used:
Python • Maple • C++

EXPERIENCE

MATRIX RESEARCH, INC. | Sr. Member of Technical Staff 1
May 2017 - Present | Dayton, OH

- Developing algorithms for 3D shape and motion reconstruction from radar range data.

UNITED STATES NAVAL RESEARCH LAB | Intern
June 2015 – August 2015 | Washington, D.C.

- Developed a MATLAB script for modeling the electromagnetic fields around an impedance wedge with variable impedance faces and wedge angle.
- Wrote a guide summarizing and simplifying the current state-of-the-art in analytic wave theory with respect to the impedance wedge.

COLORADO STATE UNIVERSITY | Graduate Teaching Assistant
August 2014 – May 2016| Fort Collins, CO

- Provided primary instruction of introductory calculus courses for physical scientists and engineers (MATH 160)
- Team-taught recently developed year-long calculus course for physical scientists and engineers, based on interactive learning approaches (MATH 157/MATH159)

ELMIRA COLLEGE | Undergraduate Researcher
June 2012 - August 2012 | Elmira, NY

- Developed two minor software packages for *Maple*, available on maplesoft.com
- Presented findings at MAA Seaway Section meeting

AWARDS

2014	Elmira College	Valedictorian
2014	Elmira College	Shabanowitz Prize (Most Outstanding Math Graduate)
2014	Elmira College	Wall Street Journal Award (Most Outstanding Economics)
2013/12	Elmira College	Phi Beta Kappa Prize

SOCIETIES

2015 SIAM - Society for Industrial and Applied Math

SERVICE & OUTREACH

2016	CSU Math Circles - developed and taught an interactive lesson for 8th graders on digital logic circuits
2016	SIAM Student Chapter President
2015	SIAM Student Chapter Vice President
2015-18	CSU Math Day - assisted with high school mathematics competition
2015-18	CSU Math, Science, Technology Day - engaged 4th grade students in a math lesson outside of the normal curriculum

PUBLICATIONS

Shape and motion reconstruction with additional data
Radar Conference Proceedings, IEEE, 2017.

Bounds for elements of the degree sequence of an unknown vertex set in a balanced bipartite graph
Rose Hulman Undergraduate Journal of Mathematics, Vol 1, Issue 14, 2013.

RESEARCH TALKS

Shape and motion reconstruction with additional data
Poster Presentation, Radar Conference Proceedings, IEEE, 2017.

Introduction to Synthetic Aperture Radar
Greenslopes Seminar, Colorado State University, 2017.

Guide to EM Scattering by an Impedance Wedge
Masters Defense, Colorado State University, 2016.

CONFERENCES

SIAM Central States Sectional Meeting, Fort Collins, CO, Sept 2017
IEEE Radar Conference, Seattle, WA, May 2017
IEEE AES Radar Summer School, Seattle, WA, May 2017
SIAM Annual Meeting, Boston, MA, July 2016
MAA Seaway Section Meeting, Elmira NY, 2012