Jeremy L Thompson

Computational Scientist

+1 (719) 502 9895
Thompson.Jeremy.Luke@gmail.com
JeremyLukeThompson
jeremylt

Education

2016–2021 **PhD**, *University of Colorado Boulder*.
Applied Mathematics (anticipated)

2012–2010 **MSc**, *University of Washington*.
Applied Mathematics

2005–2009 **BS**, *United States Air Force Academy*.
Mathematics

Experience

2017–current **Graduate Research Assistant**, *University of Colorado Boulder*.
HPC Algorithms and Software Researcher
- Developing libCEED - C99 minimal dependency library with CPU/GPU performance portability, C/C++, Fortran77, and Python interfaces
- Researching preconditioners for high order finite elements for exascale hardware
- Increased code coverage to 96% - https://github.com/CEED/libCEED

2012–2016 **Assistant Professor**, *United States Air Force Academy*.
Math Department Faculty
- Taught Calc I, Calc II, Calc III, Differential Equations, Engineering Mathematics, Discrete Mathematics
- Awarded Outstanding Academy Educator, Outstanding Course Director, Outstanding New Instructor

2014–2014 **Visiting Scientist**, *Lawrence Livermore National Laboratory*.
Summer Visiting Faculty
- Improved wind data projections for optimizing power grid production balancing
- Implemented smoothing filters, FFT, Gaussian smoothing, and non-local means

2009–2012 **Advanced Weapon Systems Analyst**, *United States Air Force*.
B-52 Testing and Analysis
- Executed testing and analysis for B-52 nuclear Air Launched Cruise Missile
- Restored USSTRATCOM confidence in USAF accuracy and reliability forecasts
- Awarded Air Combat Command Junior Military Scientist of the Year

Technical Skills

C, C++, Fortran, Python

Make, Git, Doxygen, Prove, JUnit, Travis CI

Honors and Awards

Jun 2018 **Helping Hands Volunteer Award**, *Moving to End Sexual Assault*.

2015–2016 **Brigadier General Daniel W Litwhiler Award for the Outstanding Course Director in Mathematical Sciences**, *United States Air Force Academy Department of Mathematical Sciences*.

2013–2014 **Outstanding Academy Educator**, *United States Air Force Academy Department of Mathematical Sciences*.

Spring 2013 **Outstanding New Instructor**, *United States Air Force Academy Department of Mathematical Sciences*.

2011 **Scientist of the Year, Junior Military Category**, *United States Air Force Air Combat Command*.

May 2010 **Honor Graduate, Phase II**, *Operations Research Systems Analysis Military Application Course*.

Feb 2010 **Honor Graduate, Phase I**, *Operations Research Systems Analysis Military Application Course*.

Aug 2008 **Award for Excellence in Student Exposition and Research**, *American Mathematical Society*.

Presentations

Jan 2020 **Preconditioning with BDDC and FDM for High Order Finite Elements with libCEED**.
Joint Mathematics Meetings. Denver, Colorado.

Sep 2019 **Matrix Free Multigrid with libCEED - Challenges and Applications**.
SIAM Northern States Meeting, University of Wyoming, Laramie, Wyoming.

Sep 2019 **libCEED Finite Element Library - Development Updates and Examples**.
UCAR Multicore Workshop 2019. Boulder, Colorado.

Jun 2019 **Matrix Free P-Multigrid with libCEED and PETSc**.
Invited Talk, Argonne National Laboratory. Argonne National Laboratory, Lemont, Illinois.

Feb 2019 **Optimizing Performance for Portable Generic Finite Element Interfaces**.
SIAM-SCE 2019. Spokane, Washington.

Sept 2018 **Performance and Portability with the libCEED Finite Element Library**.
UCAR Multicore Workshop 2018. Boulder, Colorado.

Aug 2018 **Designing Generic Finite Elements Interfaces**.
Mathfest 2018. Denver, Colorado.

Jul 2018 **Performance and Portability for Generic Finite Elements Interfaces**.
International Conference on Spectral and High Order Methods. Imperial Collage, London, United Kingdom.

Mar 2018 **Performance and Portability fro Generic Finite Elements Interfaces**.
SIAM Front Range Applied Mathematics Student Conference. University of Colorado Denver, Denver, Colorado.

Apr 2015 **Designing Projects for Engineering Mathematics Students**.
MAA Rocky Mountain Section Meeting. Colorado College, Colorado Springs, Colorado.

Apr 2015 **Balanced Numerical Semigroups and Their Frobenius Numbers**.
MAA Rocky Mountain Section Meeting. Colorado College, Colorado Springs, Colorado.

Aug 2014 **The Frobenius Number of Balanced Numerical Semigroups**.
Mathfest 2014. Portland, Oregon.

Jul 2014 **On the Selection of Incremental Denoising Techniques**, *for Streaming Data*.
Technical Presentation. Lawrence Livermore National Laboratory, California.

Mar 2014 **The Frobenius Number of Balanced Numerical Semigroups**.
Department of Mathematical Sciences Colloquium. United States Air Force Academy, Colorado

Jan 2012 **Mixed Data Type Exponential Smoothing for Reliability Prediction**.
53rd With Operations Analyst Forum. Eglin Air Force Base, Florida.

Dec 2011 **Mixed Data Type Exponential Smoothing for Reliability Prediction**.
Applied Mathematics Masters Symposium. University of Washington, Seattle, Washington.

Apr 2009 **Intersecting Relative Ideals and Duals of Numerical Semigroups**.
Service Academy Student Math Conference. United States Coast Guard Academy, new London, Connecticut.

Feb 2009 **Intersecting Relative Ideals and Duals of Numerical Semigroups**.
Pikes Peak Regional Undergraduate Mathematics Conference. Colorado Springs, Colorado.

Aug 2008 **Numerical Semigroups and Wilf's Conjecture**.
Pi Mu Epsilon National Meeting at MathFest 2008. Madison, Wisconsin.