Joseph D. Daws Jr.

CONTACT INFORMATION	Department of Mathematics
	University of Tennessee
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RESEARCH INTERESTS

Numerical Analysis, Approximation Theory, Optimization, Image Processing and Machine Learning.

EDUCATION

University of Tennessee at Knoxville

M.S. in Mathematics, Fall 2016
B.A. in Mathematics, Spring 2013

WORK EXPERIENCE

Spring 2017 - Present	Graduate Research Assistant, Department of Mathematics with frequent collaborations at Oak Ridge National Lab
Spring 2014 - Fall 2016	Graduate Teaching Associate, Department of Mathematics
Fall 2009 - Summer 2013	Mathematics Tutor at The Thornton Center for Student Athletes

PAPERS WRITTEN

J. Daws, C. Webster. A Polynomial-Based Approach for Architectural Design and Learning with Deep Neural Networks. *Preprint.* arXiv:1905.10457.

J. Daws, A. Petrosyan, H. Tran and C. Webster. A Weighted ℓ_1-Minimization Approach For Sparse Wavelet Reconstruction of Signals and Images on Closed Trees. *In Preparation.*

CONFERENCE TALKS

A Deep Neural Network Architecture Inspired by Polynomial Approximation, Approximation Theory 16. Minisymposium on Reduced and Parametric Methods for Function Approximations. (May 2019)

A Weighted L1-Minimization Approach For Sparse Wavelet Reconstruction of Signals and Images, SIAM CSE 2019. Minisymposium on Nonlinear Reduced Order Modeling of Realistic Engineering Fluid Flows. (February 2019)

Compressed sensing for image reconstruction using hierarchical wavelets, IMI: 9th Mini-conference in Computational Mathematics. (February 2018)

TEACHING EXPERIENCE

Spring	2014	Recitation Leader, Basic Calculus
2014 -	2015	Lecturer, Mathematical Reasoning
Spring	2015	Grader, Ordinary Differential Equations
2015 -	2016	Lecturer, Statistical Reasoning

HONORS AND AWARDS

Winter	2018	Travel Award IMI: 9th Annual Graduate Student Mini-conference in Computational Mathematics
Summer	2016	Advanced Short-Term Research Opportunity (ASTRO) at Oak Ridge National Lab
Since	2013	Member of Phi Beta Kappa Honor Society

Graduate Coursework	❏ Real Analysis ❏ Complex Analysis ❏ Optimization ❏ Linear Algebra ❏ Partial Differential Equations	❏ Scientific Computing ❏ Parallel Programming ❏ Probability/Limit Theorems ❏ Fourier Analysis ❏ Combinatorics
Relevant Skills	Coding: Software:	C, C++, Matlab, Python, OpenMP, MPI, BLAS LaTeX, Microsoft Office Suite, Adobe Illustrator