

# Victor Churchill

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CONTACT INFORMATION	Department of Mathematics Dartmouth College 27 N. Main Street Hanover, NH	(207) 216-0251 victor.a.churchill.gr@dartmouth.edu math.dartmouth.edu/~vchurchill
RESEARCH INTERESTS	<b>Image reconstruction, inverse problems, edge detection, convex optimization</b>	
EDUCATION	<b>Dartmouth College</b> Ph.D., Mathematics, 2021 (expected) A.M., Mathematics, 2017 Advisor: Anne Gelb <b>Courant Institute of Mathematical Sciences, New York University</b> M.S., Mathematics, 2016 Thesis: Fast multipole methods for axisymmetric geometries Advisor: Michael O’Neil <b>Boston College</b> B.A., Mathematics, 2013, magna cum laude, minor in economics	
PROFESSIONAL EXPERIENCE	<b>ATR Center at Wright State University</b> Dayton, Ohio (Contractor for Air Force Research Laboratory) Research Intern, Summer 2018 <ul style="list-style-type: none"><li>Worked on 3D interferometric synthetic aperture radar image reconstruction from Fourier coefficients which resulted in a presentation, poster and conference paper in preparation.</li></ul>	
SUBMITTED JOURNAL PAPERS	<ol style="list-style-type: none"><li>CHURCHILL, V., ARCHIBALD, R., AND GELB, A. Edge-adaptive <math>\ell_2</math> regularization image reconstruction from non-uniform Fourier data. <i>arXiv preprint arXiv:1811.08487</i> (2018). <a href="https://arxiv.org/abs/1811.08487">https://arxiv.org/abs/1811.08487</a>. Submitted to Inverse Problems and Imaging on May 3, 2018. (Under review).</li><li>CHURCHILL, V. AND GELB, A. Detecting edges from non-uniform Fourier data via sparse Bayesian learning. <i>arXiv preprint arXiv:1811.12220</i> (2018). <a href="https://arxiv.org/abs/1811.12220">https://arxiv.org/abs/1811.12220</a>. Submitted to Journal of Scientific Computing on November 28, 2018. (Under review).</li></ol>	
IN PREPARATION	<ol style="list-style-type: none"><li>CHURCHILL, V. AND GELB, A. Total variation regularization via synthesis. Working journal paper – will submit before end of 2018.</li><li>CHURCHILL, V. AND SCARNATI, T. Sparsity-based interferometric synthetic aperture radar from multiple elevation angles. Will submit to Algorithms for Synthetic Aperture Radar Imagery XXVI, April 19, 2019.</li></ol>	
TALKS	Aug 2018 ATR Center Summer Review <i>Sparsity-based Interferometric Synthetic Aperture Radar</i> Jun. 2018 SIAM Conference on Imaging Science <i>Edge-Adaptive <math>\ell_2</math> Regularization Image Reconstruction</i> Nov. 2017 Dartmouth Math Graduate Numerical PDEs Guest Lecture <i>ENO and WENO Schemes for Hyperbolic Conservation Laws</i> 2016- Dartmouth Math Graduate Student Seminar Quarterly Talks on, e.g., fast multipole methods, numerical integration bounds, phase retrieval, compressed sensing	

POSTERS	Oct. 2018	Celebrating Biomedical Research at Dartmouth College <i>Parameter-free Bayesian Total Variation Medical Image Denoising</i>
	Aug 2018	ATR Center Summer Review <i>Sparsity-based 3D Interferometric Synthetic Aperture Radar</i>
	Apr. 2018	Graduate Student Poster Session - Dartmouth College <i>Edge-Adaptive <math>\ell_2</math> Regularization Image Reconstruction</i>
	Jan. 2018	Annual Review of EM Contractors - Air Force Office of Scientific Research <i>Edge-Adaptive <math>\ell_2</math> Regularization Image Reconstruction from Vehicle SAR Data</i>
AWARDS	2018	SIAM Student Travel Award for SIAM Conference on Imaging Science
	2016-2021	Dartmouth Fellowship
	2013	Pi Mu Epsilon National Mathematics Honor Society
	2011-2012	National Security Education Program David L. Boren Scholarship
ATTENDED	Oct. 2017	Mathematical and Computational Aspects of Radar Imaging - ICERM
	Jun. 2017	Modern Advances in Computational and Applied Mathematics - Yale University
TEACHING	<b>Dartmouth</b>	
	Assistant Instructor, Honors Real Analysis, Winter 2019 (Scheduled) Workshop Leader, Johns Hopkins - Center for Talented Youth, May 2018 Teaching Assistant, Linear Algebra, Spring 2018 Teaching/Research Assistant, Dartmouth Mathematics REU, Summer 2017 Teaching/Research Assistant, Topics in Applied Math, Summer 2017 Teaching Assistant, Probability, Spring 2017 Teaching Assistant, Differential Equations, Fall 2016	
SERVICE	<b>Courant</b>	
	Recitation Leader, Algebra and Calculus, Fall 2015 and Spring 2016	
SERVICE	2018-	Vice President, Dartmouth SIAM Chapter
	2017-	Representative, Dartmouth Graduate Student Council
	2016-	Member, SIAM
CODING	MATLAB, Python, Mathematica, ImageJ, C/C++, Scripting, $\text{\LaTeX}$	
OTHER WORK	2014-2015	Program Manager, Code Systems Corporation