Victor Churchill

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ACADEMIC APPOINTMENTS	**Trinity College**, Hartford, CT Assistant Professor Department of Mathematics	*Jul. 2023 - Present*
	The Ohio State University, Columbus, OH Visiting Assistant Professor of Scientific Computation Department of Mathematics Mentor: Dongbin Xiu	*Aug. 2020 - May 2023*
EDUCATION	**Dartmouth College**, Hanover, NH Ph.D. Mathematics A.M. Mathematics Advisor: Anne Gelb	*Sep. 2016 - Jun. 2020* *Awarded Jun. 2020* *Awarded Nov. 2017*
	Courant Institute of Mathematical Sciences, New York University M.S. Mathematics Advisor: Michael O'Neil	*Jan. 2015 - May 2016* *Awarded May 2016*
	Boston College, Chestnut Hill, MA B.A. Mathematics, *magna cum laude*, minor in economics	*Sep. 2009 - May 2013* *Awarded May 2013*

PAPERS

1. CHEN, Z., CHURCHILL, V., WU, K., AND XIU, D. (2022).
   Deep Neural Network Modeling of Unknown Partial Differential Equations in Nodal Space,
   Journal of Computational Physics, 449, 110782.

2. CHURCHILL, V. AND GELB, A. (2023).
   Estimation and Uncertainty Quantification for Piecewise Smooth Signal Recovery,
   Journal of Computational Mathematics, 41(2), 246-262.

3. CHURCHILL, V. AND GELB, A. (2022).
   Sampling-based Spotlight SAR Image Reconstruction from Phase History Data for Speckle Reduction and Uncertainty Quantification,
   SIAM/ASA Journal of Uncertainty Quantification, 10(3), 1225-1249.

4. CHURCHILL, V., AND GELB, A. (2023).
   Sub-Aperture SAR Imaging with Uncertainty Quantification,
   Inverse Problems, 39(5), 054004.

5. CHURCHILL, V., MANNS, S., CHEN, Z., AND XIU, D. (2023).
   Robust Modeling of Unknown Dynamical Systems via Ensemble Averaged Learning,
   Journal of Computational Physics, 474, 111842.

6. CHURCHILL, V., AND XIU, D. (2022).
   Deep Learning of Chaotic Systems from Partially-Observed Data,
   Journal of Machine Learning for Modeling and Computing, 3(3), 97-119.

7. CHURCHILL, V., AND XIU, D. (2022).
   Learning Fine Scale Dynamics from Coarse Observations via Inner Recurrence,
   Journal of Machine Learning for Modeling and Computing, 3(3), 61-77.

8. CHURCHILL, V. AND GELB, A. (2019).
   Detecting edges from non-uniform Fourier data via sparse Bayesian learning,
   Journal of Scientific Computing, 80(2), 762-783.

9. CHURCHILL, V., ARCHIBALD, R., AND GELB, A. (2019).
   Edge-adaptive ℓ_2 regularization image reconstruction from non-uniform Fourier data.
   Inverse Problems and Imaging 13(5), 931-958.

10. CHURCHILL, V. AND GELB, A. (2019).
    Edge-masked CT image reconstruction from limited data,
    In *15th International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine* (Vol. 11072), 320-324, SPIE.

RESEARCH PRESENTATIONS	1. SIAM Conference on Computational Science and Engineering	*Mar. 2023*
	2. SIAM TX-LA Regional Meeting	*Nov. 2022*
	3. SIAM Conference on Mathematics of Data Science Organizer of Mini-Symposium: Data-Driven Methods in Scientific Computing	*Sep. 2022*
	4. SIAM Annual Meeting *Robust Modeling of Unknown Dynamical Systems via Ensemble Averaging*	*Jul. 2022*
	5. Joint Math Meetings (virtual) *Deep Neural Network Modeling of Unknown PDEs in Nodal Space*	*Apr. 2022*
	6. SIAM Conference on Uncertainty Quantification *Robust Modeling of Unknown Dynamical Systems via Ensemble Averaging*	*Mar. 2022*
	7. AMS Central Section Meeting (virtual) *Deep Neural Network Modeling of Unknown PDEs in Nodal Space*	*Mar. 2022*
	8. 16th U.S. National Congress on Computational Mechanics (virtual) *Learning Coarse-Grained Dynamics from High Fidelity Models*	*Jul. 2021*
	9. SIAM Annual Meeting (virtual) *Deep Neural Network Modeling of Unknown PDEs in Nodal Space*	*Jul. 2021*
	10. SIAM Conference on Imaging Science (virtual) *Binary weighting for sparsity regularization*	*Jul. 2020*
	11. AFOSR Contractor Review *High order total variation Bayesian learning via synthesis*	*January 2020*
	12. The Ohio State University Computational Mathematics Seminar *High order total variation Bayesian learning via synthesis*	*December 2019*
	13. SIAM PNW Regional Meeting *Image reconstruction via masked regularization*	*October 2019*
	14. Dartmouth Applied and Computational Math Seminar *Identifying damage in sea ice from sparse laser strain measurements*	*October 2019*
	15. SIAM SEAS Regional Meeting *Image reconstruction via masked regularization*	*September 2019*
	16. Dartmouth Applied and Computational Math Seminar *Total variation Bayesian learning via synthesis*	*May 2019*
	17. New England Numerical Analysis Days *Image reconstruction via masked regularization*	*April 2019*
	18. ATR Center Summer Review *Sparsity-based Interferometric Synthetic Aperture Radar*	*August 2018*
	19. SIAM Conference on Imaging Science *Edge-Adaptive ℓ_2 Regularization Image Reconstruction*	*June 2018*

CODING	Python (including Keras and Tensorflow), MATLAB

LAB/INDUSTRY WORK	2019	Summer Researcher, US Army Cold Regions Research and Engineering Lab, Hanover, NH
	2018	Summer Researcher, ATR Center at Wright State Univ. / Air Force Research Lab, Dayton, OH
	2014-2015	Program Manager, Code Systems Corporation (Software Startup), Seattle, WA

AWARDS	• SIAM Science Policy Fellow	*2023-2024*
	• Neukom Prize for Outstanding Graduate Research in Computational Science - 3rd Prize	*2020*
	• Neukom Prize for Outstanding Graduate Research in Computational Science - 2nd Prize	*2019*
	• Pi Mu Epsilon National Mathematics Honor Society	*2013*
	• National Security Education Program David L. Boren Scholarship	*2011-2012*

TEACHING EXPERIENCE	**The Ohio State University**, Columbus, OH	*Autumn 2020 - Spring 2023*

The Ohio State University, Columbus, OH — *Autumn 2020 - Spring 2023*
Instructor
Designed syllabi and delivered lectures, held office hours, wrote and graded homework and exams. Fully responsible for all course content and material.

- Math 3607 – Beginning Scientific Computing (Undergraduate) — *Springs 2021, 2022*
- Math 5603 – Numerical Linear Algebra (Graduate) — *Autumns 2020, 2021, 2022*
- Math 6193 – Computational Math Headstart (Entering PhD Students) — *Summers 2021, 2022*

Dartmouth College, Hanover, NH — *September 2019 - June 2020*
Instructor
Designed syllabi and delivered lectures, held office hours, wrote and graded homework and exams. Fully responsible for all course content and material.

- Math 8 – Calculus of Functions of One and Several Variables — *Spring 2020*
- Math 23 – Differential Equations — *Fall 2019*

Teaching/Research Assistant — *Sep. 2016 - Aug. 2019*
Held homework help sessions three times a week. Wrote and graded homework, held coding tutorials, and assisted students with individual research projects.

- Math 22 – Linear Algebra — *Spring 2018*
- Dartmouth Mathematics REU — *Summer 2017*
- Math 76 – Topics in Applied Math — *Summer 2017*
- Math 20 – Probability — *Spring 2017*
- Math 23 – Differential Equations — *Fall 2016*

Courant Institute, NYU, New York, NY — *Sep. 2015 - May 2016*
Recitation Leader
Instructed students in twice weekly mandatory review sessions, wrote and graded quizzes.

- Algebra and Calculus — *Fall 2015, Spring 2016*

POSTERS

Jun. 2019	15th International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine
	Edge-masked CT image reconstruction from limited data
Apr. 2019	Graduate Student Poster Session - Dartmouth College
	Image reconstruction enhancement via masked regularization
Mar. 2019	Computational Imaging - ICERM
	Image reconstruction enhancement via masked regularization
Oct. 2018	Celebrating Biomedical Research at Dartmouth College
	Parameter-free Bayesian Total Variation Medical Image Denoising
Aug 2018	ATR Center Summer Review
	Sparsity-based 3D Interferometric Synthetic Aperture Radar
Apr. 2018	Graduate Student Poster Session - Dartmouth College
	Edge-Adaptive ℓ_2 Regularization Image Reconstruction
Jan. 2018	Annual Review of EM Contractors - Air Force Office of Scientific Research
	Edge-Adaptive ℓ_2 Regularization Image Reconstruction from Vehicle SAR Data

AFFILIATIONS

2018-2020	Vice President, Dartmouth SIAM Chapter
2017-2020	Department Representative, Dartmouth Graduate Student Council
2016-	Member, SIAM

PROFESSIONAL SERVICE

Peer Reviewer for: Journal of Machine Learning for Modeling and Computing, Foundations of Data Science, Inverse Problems, Journal of Computational Physics, Journal of Scientific Computing, IEEE Transactions on Signal Processing, Inverse Problems and Imaging

PROFESSIONAL DEVELOPMENT

Fall 2019	Academic Job Search Workshop Series (10 sessions)
	Dartmouth Center for the Advancement of Learning
Winter 2019	Future Faculty Teaching Workshop Series (6 sessions)
	Dartmouth Center for the Advancement of Learning