Tony G. Allen

CONTACT INFORMATION

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EDUCATION

Purdue University **2017-present**

Ph.D. Mathematics
Dissertation: Majorized Multi-Agent Consensus Equilibrium for 3D Coherent Lidar Imaging
Advisors: Dr. Gregery Buzzard, Dr. Charles Bouman

West Virginia University **2013-2017**

B.S. in Mathematics

PUBLICATIONS

5. M. Story, T. Deller, **T. G. Allen**, "Practical Three-Dimensional Curvilinear Synthetic Aperture Radar via Majorized Plug-and-Play," *submitted to IEEE Radar, 2026.*
4. J. Tschida, M. Yohe, E. Kane, G. Jager, E.J. Reid, **T.G. Allen**, L. Thompson, J. Hoskins, B. Schreiber, S. Seiferth, S. Dolvin, D. Cornett, "Modality vs. Morphology: A Framework for Time Series Classification for Biological Signals," *submitted, 2025.*
3. **T. G. Allen**, H. Sullivan, E. J. Reid, "Illuminating the Night: A Survey of Super-Resolution Methods for Nighttime Light Images," *ASPRS Mid-South Region Conference, 2025.*
2. **T. G. Allen**, D.J. Rabb, G.T. Buzzard, C.A. Bouman, "Clamp: Majorized Plug-and-Play for Coherent 3D Lidar Imaging," *IEEE Transactions on Computational Imaging, 2024.*
1. **T.G. Allen**, E. Gebhardt, A. Kluball, T.N. Kolba, "Minimal Noise-Induced Stabilization of One-Dimensional Diffusions." *Minnesota Journal of Undergraduate Mathematics, Vol 3(1), 2017.*

CONFERENCE PROCEEDINGS

5. H. Sullivan, **T. G. Allen**, E. J. Reid, "Illuminating the Night: A Multi-Modal Fusion Approach for Super-Resolving Nighttime Light Images," *ASPRS Mid-South Region Conference, 2025.*
4. **T. G. Allen**, D.J. Rabb, G.T. Buzzard, C.A. Bouman, "Fusing Machine Learning and Measurement Models," *Military Sensing Symposium on Active EO Systems, 2023.*
3. **T. G. Allen**, D.J. Rabb, G.T. Buzzard, C.A. Bouman, "I Can See Clearly Now: Sub-Diffraction Limit Synthetic Aperture Lidar," *Electronic Imaging, Computational Imaging XXI, 2023.*

2. **T. G. Allen**, D.J. Rabb, G.T. Buzzard, C.A. Bouman, "Multi-Agent Consensus Equilibrium for Range Compressed Holographic Surface Reconstruction," *21st Coherent Laser Radar Conference*, *2022*.
1. **T.G. Allen**, E. Gebhardt, A. Kluball, T.N. Kolba, "Noise-Induced Stabilization of Stochastic Differential Equations," Poster, *Joint Mathematics Meetings*, *2016*.

Presentations

9. "Event-Guided Super-Resolution for Object Recognition," ORNL Strategic Advisory Board Poster Fair, 2025.
8. "Event-Guided Super-Resolution for Object Recognition," ORNL CRID Seminar, 2025.
7. "Practical Three-Dimensional Curvilinear Synthetic Aperture Radar," ORNL LDRD Poster Fair, 2025.
6. "Geometric Deep Learning on Graphs and Manifolds Using Mixture Model CNNs," Purdue Machine Learning Seminar, 2019.
5. "Building Machines That Learn and Think Like People," Purdue Machine Learning Seminar, 2019.
4. "Introduction to Neural Networks," Purdue Machine Learning Workshop, 2019.
3. "The Use of Graph Theory in Forensic Footwear Analysis," NIST SURF Colloquium, 2017.
2. "The Size of Edge Chromatic Critical Graphs of Maximum Degree 7," West Virginia University Capstone Day 2017.
1. "Noise-Induced Stabilization of Stochastic Differential Equations," Indiana Undergraduate Math Research Conference, July 23, 2015

Grants and Contracts

2. Principal Investigator, Oak Ridge National Laboratory, "Event-Guided Super-Resolution and Object Recognition for National Security," 2025-2027, $280,800.
1. Co-Investigator, Oak Ridge National Laboratory, "Practical Three-Dimensional Curvilinear Synthetic Aperture Radar," 2024-2025, $240,000.

Professional & Community Service

4. Sahara Hope Scholarship Committee. 2024–
3. Conference session chair for Electronic Imaging XXI. 2023
2. Referee for IEEE Transactions on Computational Imaging. 2023–
1. Referee for IEEE Transactions on Geoscience and Remote Sensing. 2023–

Honors and Awards

6. ORNL Director's Most Innovative Research Poster Award. 2025
5. NSF Graduate Research Fellowship Honorable Mention. 2017
4. WVU Eberly College of Arts and Sciences Outstanding Senior. 2017
3. WVU Department of Mathematics Outstanding Senior. 2017
2. WVU Eberly Scholar. 2016, 2017
1. Pi Mu Epsilon Member. 2015–2017