

Edward P. Chandler

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Research Area

Computational Imaging, Deep Learning, Optimization, Inverse Problems, and Computer Vision

Education

University of Wisconsin–Madison <i>Ph.D. in Electrical and Computer Engineering</i> • Advisor: Prof. Ulugbek S. Kamilov	2026 – Present GPA: 4.00 / 4.00
Washington University in St. Louis <i>Ph.D. Student in Computer Science</i> (Transferred with Advisor) • Advisor: Prof. Ulugbek S. Kamilov	2023 – 2025 GPA: 4.00 / 4.00
Washington University in St. Louis <i>B.S. in Computer Science + Mathematics</i> • Minor: Philosophy-Neuroscience-Psychology • Research Advisor: Prof. Ulugbek S. Kamilov • Academic Advisor: Prof. Ron Cytron	2019 – 2023 GPA: 4.00 / 4.00

Awards and Honors

NSF GRFP Honorable Mention	2024
McKelvey School of Engineering Valedictorian	2023
McKelvey School of Engineering Award for Research Excellence – CSE	2023
McKelvey Dean’s Select Ph.D. Fellowship	2022
Antoinette Frances Dames Award for Productive Scholarship in Engineering	2021

Experience

Computational Imaging Group

University of Wisconsin-Madison – <i>Graduate Researcher</i>	Jan. 2026 – Present
Washington University in St. Louis – <i>Graduate/Undergraduate Researcher</i>	Sep. 2020 – Dec. 2025
• Design, analyze, and implement generative models (e.g. diffusion and flow-matching) to serve as data-driven priors for imaging inverse problems.	
• Develop convex and non-convex optimization algorithms to solve high-dimensional inverse problems.	
• Apply these frameworks to a variety of imaging modalities, particularly CT and MRI.	

Los Alamos National Laboratory – <i>Graduate Researcher</i>	Jun. 2025 – Aug. 2025, May 2026 – Present
• Design and implement large-scale Computed Tomography/Laminography (CT/CL) reconstruction algorithms.	
• Develop proximal-based optimization algorithms.	

Complex Media Optics Lab, ENS Paris – <i>Visiting Graduate Researcher</i>	Jan. 2024 – May 2024
• Implemented the system modeling and reconstruction algorithm for a novel Raman spectroscopy imaging system.	
• Resulted in a publication in <i>Nature Communications</i> .	

General Dynamics Information Technology – <i>Computer Vision Data Science Intern</i>	Sep. 2021 – Aug. 2022
• Trained and optimized deep learning segmentation models for satellite imagery datasets.	

Washington University in St. Louis – <i>Teaching Assistant</i>	Sep. 2020 – Dec. 2020
• Led weekly group tutorials on analytical and coding problems for Data Structures and Algorithms.	

The Trade Desk – <i>Software Engineer Intern</i>	Jan. 2019 – Apr. 2019
• Built a full-stack news app using The Trade Desk’s database of internet users.	

Scholarly Activities

Conferences Reviewed

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2026
- European Conference on Computer Vision (ECCV) 2026
- Conference on Neural Information Processing Systems (NeurIPS) 2026

Journals Reviewed

- IEEE Transactions on Computational Imaging (TCI)
- IEEE Signal Processing Letters (SPL)
- SIAM Journal on Imaging Sciences (SIIMS)

Publications (* Equal contribution/Shared first authorship)

- [1] S. Shoushtari, **E. P. Chandler**, and U. S. Kamilov. “Moments Matter: Posterior Recovery in Poisson Denoising via Log-Networks”. In: *IEEE ICASSP*. 2026.
- [2] A. Scott, E. Louwagie, **E. P. Chandler**, S. Kolluru, C. Fosher, A. Arter, F. Manyx, U. S. Kamilov, A. Odibo, and M. Oyen. “Predicting Stillbirth Risk Factors with Ultrasound Texture Analysis and Doppler Imaging of the Placenta”. In: *Reproductive Sciences*, 2026.
- [3] **E. P. Chandler**, S. Shoushtari, B. Wohlberg, and U. S. Kamilov. “Closed-Form Approximation of the Total Variation Proximal Operator”. In: *IEEE TCI*, 2025.
- [4] S. Zhao, L. Chibani, **E. P. Chandler**, F. Liu, J. Hu, L. Valzania, U. S. Kamilov, and H. B. de Aguiar. “Computational field-resolved coherent chemical imaging”. In: *Nature Communications*, 2025.
- [5] W. Wang*, S. Shoushtari*, **E. P. Chandler**, M. S. Asif, and U. S. Kamilov. “Distribution Shift Estimation in Imaging Inverse Problems”. In: *IEEE CAMSAP*. 2025.
- [6] S. Shoushtari, J. Liu, **E. P. Chandler**, M. S. Asif, and U. S. Kamilov. “Prior Mismatch and Adaptation in PnP-ADMM with a Nonconvex Convergence Analysis”. In: *ICML*. 2024.
- [7] **E. P. Chandler**, S. Shoushtari, J. Liu, M. S. Asif, and U. S. Kamilov. “Overcoming Distribution Shifts in Plug-and-Play Methods with Test-Time Training”. In: *IEEE CAMSAP*. 2023.

Preprints (* Equal contribution/Shared first authorship)

- [8] X. Shi*, **E. P. Chandler***, C. Y. Park, S. Shoushtari, and U. S. Kamilov. *NullFlow: One-Step Generative Reconstruction*. arXiv preprint arXiv:2606.22696. 2026.
- [9] C. Y. Park, **E. P. Chandler**, Y. Hu, M. T. McCann, C. Garcia-Cardona, B. Wohlberg, and U. S. Kamilov. *Stochastic Generative Plug-and-Play Priors*. arXiv preprint arXiv:2604.03603. 2026.
- [10] S. Shoushtari, **E. P. Chandler**, Y. Wang, M. S. Asif, and U. S. Kamilov. *Unsupervised Detection of Distribution Shift in Inverse Problems using Diffusion Models*. arXiv preprint arXiv:2505.11482. 2025.
- [11] **E. P. Chandler**, S. Shoushtari, B. Wohlberg, and U. S. Kamilov. *Analysis Plug-and-Play Methods for Imaging Inverse Problems*. arXiv preprint arXiv:2509.15422. 2025.

Technical Skills

Programming & Tools: Python (PyTorch, NumPy), MATLAB, Linux/Bash, Git, Docker

Domain Knowledge: Computational Imaging, Deep Learning, Optimization, Inverse Problems, and Computer Vision