Edward Pearson Chandler
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Research Interests

Computational Imaging, Computer Vision, Deep Learning, Optimization

Education

University of Wisconsin - Madison (UW-Madison) 2026 - Present
Ph.D. in Electrical and Computer Engineering
Advisor: Professor Ulugbek S. Kamilov

Washington University in St. Louis (WashU) 2023 - 2025
Ph.D. in Computer Science
Advisor: Professor Ulugbek S. Kamilov
GPA: 4.00 / 4.00
Transferred with Prof. Kamilov to UW-Madison

Washington University in St. Louis (WashU) 2019 - 2023
B.S. in Computer Science + Mathematics joint program
- Academic Advisor: Professor Ron Cytron
- Minor in Philosophy-Neuroscience-Psychology

GPA: 4.00 / 4.00

Awards

NSF GRFP Honorable Mention (2024)
McKelvey School of Engineering Dean's Select PhD Fellowship (2022)
McKelvey School of Engineering Award for Research Excellence - Computer Science and Engineering (2023)
McKelvey School of Engineering Valedictorian (2023)
Antoinette Frances Dames Award for Productive Scholarship in Engineering (2021)

Publications

E. P. Chandler, S. Shoushtari, B. Wohlberg and U. S. Kamilov, "Closed-Form Approximation of the Total Variation Proximal Operator,"IEEE Transactions on Computational Imaging, Early Access

S. Zhao, L. Chibani, **E. Chandler**, F. Liu, J. Hu, L. Valzania, U. S. Kamilov, and H. B. de Aguiar, "Computational field-resolved coherent chemical imaging," Nature Communications 16, 7406 (2025).

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," Proc. 9th Int. Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2023), pp. 186-190

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," Proc. Int. Conf. on Machine Learning (ICML 2024)

Conferences Reviewed

Computer Vision and Pattern Recognition (CVPR) 2026

Journals Reviewed

IEEE Transactions on Computational Imaging (TCI)
IEEE Signal Processing Letters (SPL)

Other Scholarly Activities

International Conference on Machine Learning (ICML) 2024 July, 2024

Presented Poster "Overcoming Distribution Shifts in Plug-and-Play Methods with Test-Time Training"

University of Bologna PhD Summer School: Mathematics and Machine Learning for Image Analysis June, 2024

Led labs for Prof. Kamilov's Lectures on "Optimization based machine learning for computational imaging"

Technical Experience

WUSTL Computational Imaging Group September, 2020 - Present

Student Researcher

- Advisor: Prof. Ulugbek S. Kamilov
- Graduate Student Advisors: Yu Sun; Xiaojian Xu; Jiaming Liu; Shirin Shoushtari

Task: Research in optimization and deep-learning based approaches to solving imaging inverse problems, particularly for magnetic resonance imaging (MRI)

Los Alamos National Laboratory: Computer, Computational and Statistical Sciences June, 2025 - August, 2025

PhD Student Researcher

- Advisor: Dr. Brendt Wohlberg and Dr. Michael T. McCann

Task: Research in image reconstruction for computed tomography/laminography (CT/CL)

Teaching Assistant January, 2025 - May, 2025

Teaching assistant for Signals and Systems (ESE 351)
Tasks: Weekly answer questions regarding the coursework and grade midterm and final

ENS Laboratoire Kastler Brossel Complex Media Optics Lab January, 2024 - June, 2024

Visiting Student Researcher
Complex Media Optics Lab led by Prof. Sylvain Gigan and Dr. Hilton Barbosa de Aguiar at École Normale Supérieure
Task: With Prof. Kamilov, worked on research collaborations for future publications

General Dynamics Information Technology September, 2021 - August, 2022

Computer Vision Data Science Intern (part-time paid internship)
Task: Trained and evaluated image segmentation models for satellite imagery

The Trade Desk January - April, 2019

Software Engineer Intern (full-time paid internship)
Task: Created a news app using The Trade Desk's database of internet users

Relevant University Coursework

Computer Science

Adversarial AI (CSE 555T)
Advanced Algorithms (CSE 541T)
Data Mining (CSE 514A)
Large-Scale Optim. for Data Science (ESE 515)
Introduction to Machine Learning (CSE 417T)
Optimization (ESE 415)
AI and Society (CSE 411A)
Analysis of Algorithms (CSE 347T)
Data Structures and Algorithms (CSE 247A

Mathematics

Introduction to Lebesgue Integration (Math 5102)
Introduction to Analysis (Math 5101)
Stochastic Processes (Math 495)
Probability (Math 493)
Linear Algebra (Math 429)
Graph Theory (Math 371)
Prob. and Stat. for Engineering (ESE 326)
Calculus III (Math 233

Imaging

Mathematics of Imaging Science (BME 570)
Remote Sensing (EPSc 407)

Technical Skills

Python (Pytorch; Tensorflow; Numpy); MATLAB