Connor Greenwell, Ph.D.

connorgreenwell.com
cgree3 (at) gmail (dot) com
kitware.com/connor-greenwell
(firstname).(lastname)@kitware.com

1 Research Profile

Dr. Greenwell is an applied computer vision and multimodal AI researcher with over a decade of experience specializing in remote sensing, geospatial foundation models, and human-environment modeling. He has been PI on $1M+ federal research programs (NGA, DOT, ARO), with publications across CVPR-adjacent venues and IEEE flagship conferences.

2 Appointments

Kitware Inc. Computer Vision Team — *Richmond, VA*
Staff Research Scientist — 2026—Present

- Principal Investigator on multiple federal AI research programs ($1M+ total funding)
- Define and lead long-term research agenda in geospatial vision and multimodal foundation models
- Supervise junior researchers, interns, and cross-institution collaborators
- Translate research outputs into deployed systems for government sponsors

Senior Research Scientist — 2022—2026
Research and Development Intern — Summer 2021

Oak Ridge National Laboratory Natl. Security Emerging Tech. Div. — *Oak Ridge, TN*
Graduate Student Researcher — Summer 2019
Advanced Short-Term Research Opportunity (ASTRO) Program

University of Kentucky Dept. of Computer Science — *Lexington, KY*
Graduate Research Assistant — 2016—2022
Undergraduate Research Assistant — 2014—2016

3 Research Funding & Scientific Leadership

Roles include PI and Chief Scientist positions spanning award acquisition and post-award leadership.
Total funding acquired: $1,300,000

3.1 Grants (Awarded/Active)

Generative Unbiased 3D Semantic Segmentation — $1,100,000
National Geospatial Intelligence Agency, SBIR — 2024—2027
Co-PIs: **Connor Greenwell** (Kitware), Eric Smith (Kitware)

- Led development of foundation-model-based 2D-to-3D semantic segmentation for large-scale geospatial analysis

Middleware for Interactive XAI with Tree-based AI Performance Eval. $1,100,000
Army Research Office, STTR 2024—2026
PI: **Connor Greenwell** (*) (Kitware)
Co-I(s): Brian Hu (Kitware), Abhinav Verma (PSU), Jonathan Dodge (PSU)
(*) *My PI role was appointed post-award.*

- Oversaw development of open-source software architecture for evaluating reinforcement learning AI agents via neurosymbolic methods

3.2 Grants (Complete)

Complete Urban to Rural Balanced Streets by AI Design $200,000
Department of Transportation, SBIR 2024—2025
PI: **Connor Greenwell** (Kitware)
Co-I(s): Claudio Silva (NYU), Jaclyn Hakes (MJ Engineering)

- Led the development of an AI-driven *Complete Streets* analysis framework, integrating computer vision foundation models to automate walkway network extraction from aerial and ground-level imagery

Multi-scale Imitation and Robust Recognition of Obfuscated Routes $6,000,000
Intelligence Advanced Research Projects Activity, HAYSTAC Program 2023—2024
PI: Brian Clipp (Kitware)
Co-I(s): Mubarak Shah (UCF), Chen Chen (UCF), Ming Lin (UMD), Feng Chen (UTD), Apurva Kumar (CityData)
Chief Scientist: **Connor Greenwell** (*) (Kitware)
(*) *My Chief Scientist role was appointed post-award.*

- Led the development and evaluation of a multi-scale human mobility simulator focused on large, complex urban environments
- Collaborated with an interdisciplinary and multi-institution research group developing methods for adversarial trajectory obfuscation and detection methods

4 Selected Publications

(Full publication list available on Google Scholar)

[1] Connor Greenwell, Tanmay Ambadkar, Sourav Panda, Shreyash Kale, Abhinav Verma, Jonathan Dodge, Brianna Major, Aashish Chaudhary, and Brian Hu. "MIXTAPE: Middleware for Interactive XAI with Tree-Based AI Performance Evaluation". In: *NATO STO Research Symposium on AI Security and Assurance for Military Systems (IST-210)*. 2025.

[2] Sanghyun Son, Laura Zheng, Brian Clipp, Connor Greenwell, Sujin Philip, and Ming C. Lin. "Gradient-based Trajectory Optimization with Parallelized Differentiable Traffic Simulation". In: *IEEE International Conference on Robotics & Automation*. 2025.

[3] Connor Greenwell, Jon Crall, Matthew Purri, Kristin Dana, Nathan Jacobs, Armin Hadzic, Scott Workman, and Matt Leotta. "WATCH: Wide-Area Terrestrial Change Hypercube". In: *IEEE/CVF Winter Conference on Applications of Computer Vision*. 2024.

[4] Benjamin Brodie, Subash Khanal, Muhammad Usman Rafique, Connor Greenwell, and Nathan Jacobs. "Hierarchical Probabilistic Embeddings for Multi-View Image Classification". In: *IEEE International Geoscience and Remote Sensing Symposium*. 2021.

[5] Gongbo Liang, Connor Greenwell, Yu Zhang, Xin Xing, Xiaoqin Wang, Ramakanth Kavuluru, and Nathan Jacobs. "Contrastive cross-modal pre-training: A general strategy for small sample medical imaging". In: *IEEE Journal of Biomedical and Health Informatics*. 2021.

[6] Tawfiq Salem, Connor Greenwell, Hunter Blanton, and Nathan Jacobs. "Learning to Map Nearly Anything". In: *IEEE International Geoscience and Remote Sensing Symposium*. 2019.

5 Education

Doctor of Philosophy Computer Science — *Lexington, KY*
University of Kentucky — 2016—2022
Advisor: Nathan Jacobs
Dissertation: "Image Geo-localization with Cross-Attention"

Bachelor of Science Computer Science & Mathematics — *Lexington, KY*
University of Kentucky — 2011—2016

6 Professional Service

6.1 Reviewing

IEEE/CVF Conference on Computer Vision and Pattern Recognition 2019—2026
IEEE Winter Conference on Applications of Computer Vision 2019—2025
EarthVision: Large Scale Computer Vision for Remote Sensing Imagery 2021—2023
ISPRS Journal of Photogrammetry and Remote Sensing 2020—2021
AAAI Conference on Artificial Intelligence 2021
British Machine Vision Conference 2020