DRYVER Z. FINCH
dryver.finch@outlook.com
████████

Department of Geography and Sustainability
University of Tennessee, Knoxville
Knoxville, TN 37996

Geographer specializing in remote sensing applications for land and resource monitoring, conservation, and ecological disease surveillance. My work integrates both satellite- and UAS-based multispectral imaging with machine and deep learning techniques. Passionate about developing Python tools to automate workflows and promote accessibility to advanced analysis, while maintaining reproducibility and transparency.

EDUCATION

2026 (August)	Master of Science, Geography University of Tennessee, Knoxville Focus: Remote Sensing and Geospatial Software Engineering Advisor: Dr. Hannah Herrero
2024	Bachelor of Science Geographic Information Science and Technology University of Tennessee, Knoxville *Magna cum laude*

TECHNICAL SKILLS

Languages & Frameworks	Python, Pytorch, R, Java, Docker, Singularity
Machine Learning & Computer Vision	Random Forest, XGB, CNNs, YOLO models, UNET, Pytorch, scikit, image segmentation, object detection
Remote Sensing & GIS	PlanetScope imagery processing, multispectral analysis, landcover classification, Google Earth Engine
Tools & Platforms	Git/GitHub, QGIS, ArcGIS Pro, VS Code, Azure, Cloud computing, High Performance Computing

PROFESSIONAL AND TEACHING EXPERIENCE

2024 – Present	Graduate Teaching Assistant University of Tennessee, Knoxville Department of Geography and Sustainability *GEOG 413: Remote Sensing of the Environment* Overhauled lab curriculum to reflect industry standards; Introduced over 40 students to fundamentals of remote sensing

GEOG 314: Intro to Uncrewed Aerial Systems
> Prepared students for the FAA Part 107 Knowledge Exam; Introduced students to professional/academic UAS applications

2024 – 2025 GIS Labs Assistant
University of Tennessee, Knoxville
Department of Geography and Sustainability
> Assisted Lab Manager with upkeep of over 60 department lab computers' hardware and software; Conducted field missions with department UAS technology in support of various research projects.

2024 (Aug.-Dec.) Education Collaboration at ORNL (ECO) Intern
Geospatial Science and Human Security Division
Mentor: Dr. Matt McCarthy
> Supported ongoing narcotics smuggling interdiction research with United States Coast Guard and Department of Homeland Security

2024 (May-Aug.) Science Undergraduate Laboratory Intern (SULI)
Geospatial Science and Human Security Division
Mentor: Dr. Matt McCarthy
> Developed vessel-detection methods using deep learning and computer vision techniques

2023 – 2024 Legal/Executive Assistant
Stephens & DiRado, LLP
Knoxville, TN
> Served as main point of contact for the firm; prepared motions, orders, and briefs to be filed in criminal court

2022-2023 Environmental Compliance Intern
Knoxville Utilities Board
Department of Safety and Technical Services
> Created site maps for wastewater treatment facilities for annual compliance reports and developed a records-management system for state/federal reporting

2021-2022 Water Systems Engineering Intern
Knoxville Utilities Board
Department of Water Systems Engineering
> Digitized and catalogued all new and repaired assets in ArcGIS Enterprise system; created maps for engineers

AWARDS & HONORS

2026	UTK Graduate Student Senate Travel Award
2025	Bruce Ralston Geospatial Achievement Award
2025	TN View Fellowship Recipient
2024	University of Tennessee GIS&T Student of Distinction

PUBLICATION & MANUSCRIPTS

Herrero, H.V., Zoe Van der Walt, Erin Bunting, Insalaco, S., Spining, J., <u>Finch, D.Z.</u>, Southworth, J., Blackburn, J.K... (under review) *Pathways to Sustainable Land Stewardship in South Africa's Wine Producing Regions*. Submitted to: *Sustainability*

Finch, D.Z., Herrero, H.V., & Blackburn, J.K.. (in preparation) *plaknit: An open-source Python package for large-scale PlanetScope imagery processing*. Target journal: *Journal of Open-Source Software*

Finch, D.Z., Herrero, H.V., Nthiga, N., Blackburn, J.K.. (in preparation). *Mapping high-resolution anthrax ecologies: PlanetScope data and high-performance computing for ecological niche modeling in the Texas Anthrax Triangle*. Target journal: *Journal of Biogeography*

CONFERENCE PRESENTATIONS

2026 (March 31)	American Society of Photogrammetry and Remote Sensing, Mid-South Region Oak Ridge National Laboratory, TN Title: *Introducing plaknit: An Open-Source Python Software Package for Large-Scale PlanetScope Imagery Processing*
2026 (March 21)	American Association of Geographers Symposium on Spatial AI and Data Science: Frontiers and Applications: Big Data Computing for Geospatial Applications San Francisco, CA Title: *Mapping High Resolution Anthrax Ecologies: Integrating PlanetScope Data and High-Performance Computing for Ecological Niche Models*

2025 (Sept.)	TN View Annual Webinar Title: *Hog-Spot Analysis: Monitoring the Fiends of the Smokies with UAS and PlanetScope Imagery*
2025 (April)	American Society of Photogrammetry and Remote Sensing, Mid-South Region Oak Ridge National Laboratory, TN Title: *High-Resolution Land Cover and Phenological Analysis of Anthrax Outbreak Landscapes in the Texas Anthrax Triangle*
2025 (March)	American Association of Geographers Disease Ecologies Session Detroit, MI Title: *Landscape or Founder Effect: Examining differences in land cover characteristics associated with two distinct lineages of* Bacillus anthracis *in the Texas Anthrax Triangle*

FIELD EXPERIENCE

2025	UAS Imaging of Cataloochee Valley Great Smoky Mountains National Park In support of NSF Grant #2501466 P.I.: Dr. Anna Marshall, UTK
2025	Archeological Aerial Data Collection Heathsville, VA In support of UTK Dept. of Anthropology

GUEST LECTURES

2026 - Spring	Geography 499: Practicing Geography
2026 - Spring	Geography 132: Landscapes and Environmental Change
2025 - Fall	Geography 513: Advanced Remote Sensing
2025 - Spring	Geography 111: Our Digital Earth
2025 - Spring	Geography 331: Natural Hazards
2024 - Fall	Geography 413: Remote Sensing of the Environment

MEMBERSHIPS

UTK Drylands and Remote sensing for Conservation Lab, *Managing Member*
UTK GeogGrads, *Department Events Committee Graduate Representative*
American Society of Photogrammetry and Remote Sensing
American Association of Geographers
Southeastern Division of the American Association of Geographers

LINKS

Personal Website: https://dzfinch.github.io/
LinkedIn: https://www.linkedin.com/in/dryverfinch/
GitHub: https://github.com/dzfinch
Outreach/articles: Boots on the Ground, Drones in the Air - College of Arts and Sciences

CERTIFICATIONS

FAA PART 107 UAS Remote Pilot (Cert. No. 5217840)