Thomas Colligan
Platform Engineer for Scientific Computing at Spark Climate Solutions
tcolligan.org | GitHub: github.com/colligant

OVERVIEW & BACKGROUND

Thomas Colligan is a scientific software developer with expertise in machine learning, high-performance computing, cloud computing, and software design. Currently, he's working on the Warming-Induced Emissions Model Intercomparison Project at Spark Climate Solutions as a Platform Engineer. His research and software development aims to deepen our understanding of the biospheric carbon cycle, particularly in wetland methane and biospheric carbon anomaly detection and attribution. Thomas also enhances the availability, latency, and fidelity of biospheric carbon estimates by streaming near-real-time LPJ-EOSIM products to the Land Processes Distributed Active Archive Center (LPDAAC) using modern data engineering techniques. Previously, he worked as a staff researcher at the University of Arizona, where he conducted basic research in machine learning and bioinformatics, published multiple software libraries, and mentored students.

Skills/tools:

- Python, C/C++, Slurm, bash, R, Matlab, C/C++, Docker, Airflow, git, PyTorch, tensorflow, huggingface, beginner in Terraform
- Workflow orchestration, ETL pipelines, AWS
- Google Earth Engine, rasterio, QGIS, GDAL
- Transformers, contrastive learning, model emulation, semantic segmentation

EDUCATION & EXPERIENCE

Spark Climate Solutions — **College Park, MD**
Platform Engineer for Scientific Computing — *Oct 2025 - Present*

UMD CMNS-ESSIC / NASA GSFC — **College Park, MD**
Assistant Research Scientist — *Jul 2023 - Oct 2025*

University of Arizona — **Tucson, Arizona**
Research Scientist — *Oct 2022 - Feb 2023*

University of Montana — **Missoula, MT**
Research Scientist — *Jan 2021 - Oct 2022*

University of Montana — **Missoula, MT**
MS, Computer Science — *Sep 2018 - Dec 2020*

University of Montana — **Missoula, MT**
BA, Physics, magna cum laude, minor Computer Science — *Sep 2013 - Aug 2018*

PUBLICATIONS

See https://scholar.google.com/citations?user=dnRnHswAAAAJ&hl=en.