

Proposal for Summer Session Project
Thomas Martin
AI/ML Software Engineer III
tmartin@ucar.edu

Company background:

NSF Unidata, a non-profit organization based in Boulder, Colorado serving atmospheric scientists. <https://www.unidata.ucar.edu/>

Work to be done:

I would like to see a demo / proof of concept of a 3D python based web viewer for scientific data. This can be a steamlit app, or something else. How it's hosted is up to the students. This would need to be a GUI where people can drag or drop datasets, or point it towards a URL for S3 hosted datasets. Do not want to see a jupyter based solution, would like it to run in a browser.

Want to explore:

- PyVista (<https://pyvista.org/>)
- Plotly (<https://plotly.com/>)
- GPU vs no GPU
- Adding any MetPy features where possible (<https://github.com/Unidata/MetPy>)

This would be an open source project with a normal open source license. No NDA is required. Would love for this to be a portfolio project for the students.

Desired Skills:

Python scientific stack (numpy, xarray, matplotlib). Understanding geospatial datasets would be great (netCDF /xarray)! But not required (can learn). An interest in weather or climate data would be helpful.

Preferred team size:

2-4

Location where work should be performed:

Remote is fine! Can meet in Golden if local, not required.