Shane Grigsby
Remote Sensing Scientist

Applied scientist with 10 years of remote sensing algorithm innovation. Doctoral specializations in glacial hydrology, laser remote sensing, machine learning and geostatistics. Masters specializations in atmospheric correction, remote sensing of vegetation, hyperspectal and thermal remote sensing.

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github.com/espg ○

WORK EXPERIENCE

Research Assistant
CIRES ☒

06/2014 – Present

Developed a novel processing pipeline and "roughness" data product for the NASA ICESat satellite. Our project used millions of laser waveforms collected over multiple years to map the location and character of crevasses on the Greenland ice sheet for the first time.

- Developed novel unsupervised method of classifying hundreds of thousands of unlabeled raster tiles from compressed data
- Specified high performance computing hardware requirements, and developed algorithmic capabilities for project

Team Lead & Data Architect
Orbital Micro Systems ☒

07/2018 – 02/2019

Lead the data ingest team through the design phase of a satellite startup that aims to provide low latency operational weather data.

- Provided leadership porting scientific MATLAB radiative transfer code to production python for deployment to the AWS cloud
- Architected spatial indexing schema for petabyte scale rasters

Research Analyst
'BigData' Intel Science and Technology Center

09/2013 – 08/2014

Developed driving remote sensing applications and science use cases for SciDB, an array-database for distributed storage and high performance linear algebra operations on sparse multidimensional arrays. Our science dataset was one year of raw MODIS data.

- Developed data ingest scripts and schema for preprocessing and importing MODIS data granules
- Prototyped spacio-temporal indexing for fast lookup and retrieval of image subsets

Instructor
NASA Student Airborne Research Program

05/2012 – 08/2015

Supervised and led teams of 8 to 10 STEM college upperclassmen through acquisition, validation, and processing of data collected by NASA Airborne assets.

- Planned flight lines, vicarious calibration campaigns, and science objectives
- Deployed a novel photon-counting LiDAR system for its maiden airborne flight
- Instructed proper use of both field equipment and atmospheric correction techniques

Linux Systems Administrator
UnixOps, CU Research Computing

10/2009 – 09/2011

Administered Linux, Unix, Solaris systems and high performance clusters.

- Maintained research computing hardware assets in support of university research computing
- Developed and maintained custom software builds for high performance computing clusters and resources

EDUCATION

PhD in Geography
University of Colorado, Boulder

08/2014 – 05/2019

Greenland Surface Roughness Retrieval and Status
- Advisor: Waleed Abdalati

MS in Geography
University of California, Santa Barbara

08/2011 – 08/2014

Improved surface temperature estimates with MASTER/AVIRIS sensor fusion
- Advisor: Dar Roberts

SCIENTIFIC CONTRIBUTIONS

Publication Metrics:
Published 5 papers since 2015; current h-index of 5, with 100+ citations

Journals I publish in:
Nature Communications, Remote Sensing of Environment, Reviews of Geophysics, The Cryosphere

Journals I review for:
Remote Sensing of Environment, IEEE Transactions on Geoscience and Remote Sensing, Ecological Processes

Invited Talks:
ISAR5 (Tokyo), AGU (New Orleans), Scipy (Austin), NASA Goddard, AGU (San Fransisco), NASA Ames, FOSS4G (Denver), Google (Boulder)

Open source contributions:
Sklearn contributor, primary author of the OPTICS clustering algorithm

AWARDS & GRANTS

$75,685 in competitive award funding
Awards from:
- US Geospatial Intelligence Foundation
- US Department of State
- GeoEye (now DigitalGlobe)
- UCSB Green Initiative Fund
- CU Environmental Center

OTHER SKILLS

Executive board governance   Data and sensor fusion

Polar expedition and field skills

LANGUAGES

Spanish   ● ● ● ○ ○

Python   ● ● ● ● ●

Git   ● ● ● ● ○