



Student Scholarship Internship Opportunity (SSIO) Online System

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SSIO 2022 Internship Opportunity Position

Internship Information

Project title: GOES-R Cloud-based Mission Visualization Internship

NOAA mission goal: Science and Technology Enterprise

Hypothesis or objectives: The objective of these internships is to experiment with new paradigms for rapid and collaborative integration of satellite data into Federal agency environmental service programs. Scholars will create satellite data visualization applications for new and emerging mission partners including the National Ocean Service, National Marine Fisheries Service, and the National Weather Service. Open source cloud-based technologies and techniques will be employed with the intent of creating a community-owned open-source evolving framework for such applications.

Academic status: Graduate

Estimated start - end date: June 2022 - August 2022

Duration: 3 months

Area(s) of discipline: Computer Engineering, Computer Science, Meteorology, Oceanography, Physics, Remote Sensing Technology

Internship location: Silver Spring, MD

Duties and responsibilities: Scholars will be paired with a client mission professional (i.e. Forecaster or Analyst) along with technical mentors in remote sensing, computer science, and the natural sciences to create a specific rapid response interactive tool for use in the client mission. Using an agile approach with six sprints, scholars will have an opportunity to use the Amazon Web Services (AWS) framework to contribute to the development of an open-source real time multi user secure streaming system to deliver real-time satellite displays to mission users.

Special skills/training required: With the project focus being processing, distribution and visualization of environmental remote sensing data, candidates should be well versed in a range of computer languages, prominently including python and javascript. Experience with data manipulation, visualization, and data science will be advantageous, as will familiarity and enthusiasm for remote sensing, meteorology, and earth science.

Expected outcomes: The new and improved capabilities that the scholars will contribute will enable the scholars to be given the opportunity to tie these technical features to operational challenges that NOAA's users face daily. As an example, the National Marine Fisheries Service (NMFS) requires more timely high-resolution imagery to improve regulatory and interdiction applications to law enforcement and Whale Watch operations. In addition, the National Ocean Service (NOS) requires large-scale, continuous imagery to monitor habitat and coastal changes, as well as the impacts of Harmful Algal Blooms (HABs). This work will expose the scholars to mission operational concepts and the migration operations process.

Guidance and supervision: Our scholars will be guided by the GOES-R Product Readiness and Operations deputy lead, Maurice McHugh. Scholars will spend much of time interfacing with the Product Readiness & Operations (PRO) team, which is composed of meteorologists, systems engineers, and computer scientists. Scholars will meet with mentors in daily calls and will work together and with other team members daily in a collaborative and nurturing environment. Scholars will additionally participate in a weekly seminar that will expose scholars to scientists and senior leaders who will present expert insight into NOAA's mission and activities.

Application package: Not applicable

Posted or modified date/time: Thursday, September 30, 2021 - 1:32:00 PM

Internship Travel Information

Purpose (student's role): N/A

This internship is expected to be conducted from a remote location due to ongoing public health impacts from COVID 19.

Mode of transportation: ---

Date(s): ---

Destination: ---

Estimated cost: ---

Source of funding: ---

Mentors Contact Information

Name: Mchugh, Maurice

Organization: National Environmental Satellite, Data, and Information Service (NESDIS)

Program office: GOES-R

Mailing address: Building 6, W227, Nasa Goddard Spaceflight Center
Greenbelt, MD 20771

Fax number: None

Phone number: 301-938-5378

Email: maurice.mchugh@noaa.gov

Co-Mentor name: Maurice Mchugh

Co-Mentor email: maurice.mchugh@noaa.gov

Agency or organization: NOAA/GOES-R



[Admin Action](#)

Submitted internship: **Approve**
 Disapprove

Additional comment(s): *(300 characters max)* Accepted for a minimum 3-month EPP NERTO internship. Requires: a workplan developed by CSC and NOAA mentor; substantial engagement with NOAA mentor; and, NOAA-aligned professional development. Queries are sent to: oed.epp10@noaa.gov.

Admin Initials (required):

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