Subhatra Sivam

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Earth System Scientist

Education

University of California, Santa Barbara (UCSB)

Earth Science, Ph.D. *June 2030*

University of Maryland , College Park (UMD) **Overall GPA: 3.88/4.0**

Atmospheric and Oceanic Sciences, B.S. (High Honors) *May 2023*

Theatre, B.A. *May 2023*

Minors: Archaeology, Surficial Geology

Undergraduate Thesis: *Comparing Air-Sea Heat Flux over the Pacific Arctic Ocean from Saildrone Observations and Global Flux Products*

Work/Research Experience

Carr Astronautics Atmospheric Scientist *June 2023 – present*

- NOAA/NESDIS/STAR: Research remote sensing uses and needs for NOAA/NESDIS operations.
  - Reconstructed radiance data by using hybrid principal component analysis on operational Cross-Track Infrared Sounder (CrIS) data and checked its effect on numerical weather prediction models.
  - Helped integrate Infrared Atmospheric Sounding Interferometer (IASI) with CrIS data to increase satellite imagery coverage.
  - Researched space weather sensors, variables, and data characteristics to assess efficiency and cost-effectiveness of sensors used in NOAA space weather operations.
  - Assess impact of NOAA space weather data and research on space traffic management sector.
- NASA: Developed regression model relating light types and nighttime hyperspectral radiance satellite data.

NOAA Lapenta Intern *June 2022 – May 2023*

- Compared air-sea heat flux between three global reanalysis products (MERRA2, ERA5, CFSv2) and saildrone observations in the Bering, Chukchi, and Beaufort Seas.

UMD Environmental Monitoring Lab Researcher *September 2020 – May 2021*

- Monitored carbon dioxide levels in and around the UMD Campus through low-cost sensors.

John Hopkins University Applied Physics Lab ASPIRE/College Intern *September 2018 – March 2022*

- Integrated artificial light behavior and propeller wakes into a MATLAB-based ocean simulation.
- Developed a python-based interface for real-time data acquisition in hydrodynamics testing facility.
- Created a python-based interface for a Bayesian network used to predict underwater munition locations in an old testing site.
- Compared radiative transfer calculations between two MATLAB-based ocean simulations.

Howard County Conservancy G/T Intern *September 2017 - June 2018*

- Compiled data about the environmental quality of Howard County schoolyards and local tributaries.
- Worked with high school students to run riparian experiments.

Publications

Sivam S, Zhang C, Zhang D, Yu L and Dressel I (2024) Surface latent and sensible heat fluxes over the

Pacific Sub-Arctic Ocean from saildrone observations and three global reanalysis products. *Front. Mar. Sci.* 11:1431718. doi: 10.3389/fmars.2024.1431718

Posters

- Sivam S, Zhang C. Surface latent and sensible heat fluxes over the Pacific Arctic Ocean from saildrone observations and three global reanalysis products. *American Meteorological Society 2024.*

Teaching Experience

UMD Undergraduate Teaching Assistant

- Large-Scale Dynamics of the Atmosphere and Ocean (AOSC432) *January 2023 – May 2023*
- Atmospheric Thermodynamics (AOSC431) *September 2022 – December 2023*

Campus Activities

UMD: American Meteorological Society *October 2022 – May 2023*

- Attended meteorology lectures and seminars.

UMD: Ocean Builders Club *May 2022 – May 2023*

- Constructed conductivity, temperature, and depth measurement tools for oceans data collection.

UMD: Veritas Films (Vice President, Head of Sound) *May 2022 – May 2023*

- Organized training sessions on how to use sound and lighting film technology.
- Managed microphones and sound mixers on set.
- Mixed sound in post-production editing.

Honors and Awards

Henry Fleming Award for Outstanding Senior *May 2023*

- Awarded by the UMD Department of Atmospheric and Oceanic Science.

Science Diplomacy Citation *December 2022*

- Awarded by the UMD Global Fellows Program.

Louis Allen Award for Outstanding Rising Senior *May 2022*

- Awarded by the UMD Department of Atmospheric and Oceanic Science.

Honors Citation *December 2021*

- Granted by the Honors College: University Honors Program.

Robert Brammer Undergraduate Prize Competition in Climate Finance – Second Place. *May 2021*

- Awarded by the UMD Department of Atmospheric and Oceanic Science and Smith School of Business.

Dean's List *Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022, Spring 2023*

Skills

Programming: MATLAB, Python, Linux, HTML/CSS, Fortran (beginner)
Data Analysis and Visualization: Microsoft Office, Google Drive, LaTeX, ArcGIS, Google Earth
Field Research Techniques: photogrammetry
Audiovisual Technology: light board operation and programming, live sound mixing, microphones
Audiovisual Software: QLab, Logic Pro, GarageBand, Adobe Premiere, Adobe Photoshop, Adobe Audition
Language: English, Tamil, Spanish