Alexandre Erich Sébastien Georges, Ph.D.

Engineer, Water Resources | California Department of Water Resources
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Education

Ph.D. in Civil and Environmental Engineering **January 2021 - December 2025**
University of California, Berkeley
Advisor: Prof Mark T. Stacey
Dissertation: Remote Sensing and Hydrodynamic Modeling of Mangrove-Storm Surge Interactions in Haiti.

M.S. in Civil and Environmental Engineering **August 2020 - December 2021**
University of California, Berkeley
Specialization: Environmental Fluid Mechanics and Hydrology.

B.E. in Civil Engineering **August 2016 - May 2020**
Stony Brook University, State University of New York
Specialization: Water Resources and Environmental Engineering.

Publications

Journal Article (In Preparation): [1] Georges, A., [1] Stacey, M., [2] Ramsewak, D., "Spatio-Temporal Change in Mangrove Health and Storm Surge Attenuation Impact in Grand-Pierre Bay, Haiti."
[1] University of California, Berkeley
[2] University of Trinidad and Tobago

Conference Presentations

Coastal Ocean Dynamics - Gordon Research Conference 2025 **June 7-13, 2025**
Seminar Talk and Poster Presentation New London, New Hampshire
Haitian Mangroves' Climate Resilience and Performance for Storm Surge Attenuation

Caribbean Studies Association (CSA) Conference 2024 **June 3-7, 2024**
Panel Presentation Participant Rodney Bay, Saint-Lucia
Constructing Just Futures: Navigating Climate Adaptation, Infrastructure, and Resource Stewardship in the Caribbean | Mangrove Forests as Natural Coastal Defense in Haiti.

Coastal Ocean Dynamics - Gordon Research Conference 2023 **June 18-23, 2023**
Poster Presentation Smithfield, Rhode Island
Remote Sensing Analysis of Mangrove Resilience and Cover Change in the Grand-Pierre Bay, Haiti

Professional Experience

Engineer, Water Resources **October 2025 - Present**
California Department of Water Resources Sacramento, CA
Supervisor: *Kijin Nam, Ph.D., P.E.*
• Develop tool for bayesian inference of longfin smelt hatching locations and population estimates in the Sacramento-San Joaquin Delta using SCHISM hydrodynamic model outputs, OceanTracker particle tracking simulations and Stan model.
• Participate in the development of the suxarray library.
• Data analysis and visualization of hydrodynamic model outputs for water resources management and other applications.
• Collaborate with interdisciplinary teams to support water resources projects.

Research Experience

Graduate Student Researcher **January 2021 - October 2025**
University of California, Berkeley | Environmental Fluid Mechanics and Hydrology Group Berkeley, CA
Supervisor: *Prof. Mark T. Stacey*

• Developed remote sensing methodologies for quantifying mangrove forest health and voerage using Planet Labs satellite imagery and Python-based workflow.
• Implemented ADCIRC hydrodynamic model to simulate hurricane-induced storm surges in Gulf of Gonave, Haiti.
• Conducted spatiotemporal analysis of mangrove-storm surge interactions using couple remote sensing and numerical modeling approaches.
• Collaborated on sea-level rise adaptation study for San Rafael, CA, providing geospatial analysis and visualization expertise.
• Mentored undergraduate and graduate student researchers in remote sensing and geospatial data analysis techniques.

Undergraduate Research Assistant **October 2019 - March 2020**
Stony Brook University | Environmental Engineering and Science Laboratory Stony Brook, NY
Supervisor: *Sarah Lotfikatouli, Ph.D.*

• Conducted laboratory experiements on nitrogen removal from on-site wastewater treatment using membrane bioreactors.
• Performed water quality analysis using spectrophotometry, dissolved oxygen measurements, and bacterial enumeration.
• Evaluated membrane filter effectiveness through contact angle measurements for MBR optimization.

Teaching Experience

Teaching Assistant | Engineering Data Analysis (CE93) **Spring 2024**
University of California, Berkeley
Led laboratory sections, held office hours, proctored exams, and assisted with course technologies.

Teaching Assistant | Environmental Fluid Mechanics I (CE200A) **Fall 2022**
University of California, Berkeley
Led discussion sections, held office hours, graded assignments, managed course page and course technologies.

Reader/Teaching Assistant | Environmental Fluid Mechanics II (CE200B) **Spring 2022**
University of California, Berkeley
Held office hours, graded assignments, and managed course technologies

Reader | Environmental Fluid Mechanics I (CE200A) **Fall 2021**
University of California, Berkeley
Graded assignments and provided feedback to students.

Technical Skills

Programming & Software
Python (numpy, pandas, xarray, scikit-learn, etc.)
MATLAB
bash/shell scripting
QGIS and ArcGIS Pro
Git version control
LaTeX and Typst (this CV was made with Typst!)
Linux and HPC environments
HTML/CSS/Django experience

Hydrodynamic & Environmental Modeling
ADCIRC
SCHISM
Delft3D FM
OceanTracker
Remote sensing data processing (Planet, Landsat, Sentinel-2)
Geospatial analysis (GDAL, rasterio, geopandas)

Certifications and Professional Development

Awards and Honors

Service and Leadership

Languages

Native/Bilingual: French, Haitian Creole | **Fluent:** English | **Basic:** Spanish