BERNARD AKAAWASE

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 Bernard-Akaawae | Bernard-Akaawase | Akaawase Bernard | BernardAkaawase

Groton, CT - 06340, USA

OBJECTIVE

To contribute in a software-focused role within a team developing reliable, high-impact products or systems for environmental sensing, education, and scientific innovation. I offer strong expertise in oceanography, data analysis, marine engineering, instrumentation, robotics, computer vision, and CAD—with hands-on experience building tools that support research, education, and real-world problem-solving.

EXPERIENCE

University of Connecticut [⊕]   *08 2021 - Till date*
Graduate Research Assistant   Groton, USA
- Assisted in collecting and analyzing stereo camera imagery to investigate ocean wave surface waves.
- Designed and constructed a portable wave flume for experimentation and public outreach.
- Mentored undergraduate students on fieldwork, data analysis, and oceanographic research projects.
- Presented research findings at major conferences including Ocean Sciences Meeting, STRATUS Workshop, and WISE meetings.

The Offshore Lab [⊕]   *04 2019 - 03 2021*
Offshore Engineer II   On-Site
- Designed and rendered 3D models of several offshore platforms to implementation in Virtual Reality developemnt.
- Produced outreach videos and ads, boosting event engagement by 40 %

Center for Maritime and Offshore Studies [⊕]   *04 2016 - 03 2021*
Research Assistant   Hybrid
- I contributed about 20% towards designing, fabrication, and deployment of a barge, underwater turbine, and 17-seater boat.
- Conducted analyses that contributed to 5 research publications over 3 years

EDUCATION

University of Connecticut   *08 2021*
Graduate School: Oceanography   Groton, USA
- Advisor: Prof. Leonel Romero

Federal University of Petroleum Resources   *09 2012 - 02 2018*
Undergraduate: Marine Engineering   Effurun, Nigeria
- Advisor: Engr. Joshua Abam, PhD

PUBLICATIONS   C=CONFERENCE, J=JOURNAL, P=PATENT, S=IN SUBMISSION, T=THESIS

[J.1] Akaawase, B.T., Romero, L., & Benetazzo, A. (2025). **Observations of Wave-Breaking Direction and Energy Spread**. *Geophysical Research Letters*, Vol. 52, Issue 14, e2025GL116452. DOI: 10.1029/2025GL116452

[J.2] Agbakwuru J., Akaawase B.T., & Gudmestad O.T. (2020). **The sea state description of Asabo offshore in Nigeria**. *Ocean Systems Engineering*, Vol. 10, No. 1, pp. 25–47. DOI: 10.12989/ose.2020.10.1.025

[J.3] Agbakwuru, J.A., & Akaawase, B.T. (2020). **Statistical wave description of Forcados offshore in Nigeria**. *FUPRE Journal of Scientific and Industrial Research*, Vol. 3, No. 3, pp. 35–49.

[J.4] Agbakwuru, J., & Akaawase, B.T. (2018). **Evaluation of wind potentials in the Nigerian onshore and offshore locations**. *FUPRE Journal of Scientific and Industrial Research*, Vol. 1, No. 2, pp. 91–112.

[J.5] Akaawase, B.T., & Abam, S.T. (2018). **Structural response of a standalone FPSO by swell waves in offshore Nigeria**. *International Journal of Scientific and Engineering Research*, Vol. 9, Issue 2.

[J.6] Agbakwuru, J.A., & Akaawase, B.T. (2020). **Spectral characterization of Bonny offshore water waves in Nigeria**. *Uniport Journal of Science and Engineering Research*, Vol. 3, No. 5, pp. 13–34.

[J.7] Agbakwuru, J.A., & Akaawase, B.T. (2021). **Spectra Response Computation of P23 boat in Bonny Offshore Water**. *Uniport Journal of Engineering and Scientific Research*, Vol. 5, Issue 2.

[J.8] Agbakwuru, J.A., Akaawase, B.T., & Nwaoha, T.C. (2023). **Application of a Revised FMEA approach for Reliability Evaluation of Vertical Axis Underwater Current Power Turbine Blade: A case of a novel UCPT in Nigeria**. *FUPRE Journal of Scientific and Industrial Research*, Vol. 7, Issue 1.

[J.9] Agbakwuru, J.A., Akaawase, B.T., & Abam, J. (2022). **Comparative Spectral Motion Responses of P23 and W23 Passenger Boats in Bonny Offshore Water in Nigeria**. *Uniport Journal of Engineering and Scientific Research*, Vol. 6, Issue 2, pp. 52–63.

[C.1] Akaawase, B.T., Romero, L., & Benetazzo, A. (2024). **Directional breaking kinematics from 3D stereo reconstruction of ocean waves**. *Ocean Sciences Meeting*, New Orleans. (Talk)

[C.2] Akaawase, B.T., Romero, L., & Benetazzo, A. (2023). **Directional breaking kinematics from 3D stereo reconstruction of ocean waves**. *WISE Meeting*, Princeton University. (Talk)

[C.3] Akaawase, B.T., Romero, L. (2023). **Development of a novel Portable Airborne Mapping System (PAMS)**. *STRATUS Conference*, RIT, Rochester, NY. (Talk)

[C.5] Akaawase, B.T., Romero, L., & Benetazzo, A. (2023). **Directional breaking kinematics from 3D stereo reconstruction**. *Brown Bag Seminar*, UConn. (Talk)

[C.9] Akaawase, B.T. (2019). **Development of Underwater Current Power Turbine**. *Future Earth & ESA Atlantic Workshop*, Portugal. (Talk)

[C.11] Akaawase, B.T. et al. (2025). **Phase-Resolved Broadband Observations of Directional Breaking Waves**. *Waves in Shallow Environments (WISE) Meeting*, University of Washington, Seattle. (Talk)

[C.4] Akaawase, B.T., Romero, L., & Benetazzo, A. (2023). **Directional breaking kinematics from stereo imagery**. *Feng Graduate Research Colloquium*, UConn. (Poster)

[C.6] Akaawase, B.T. (2023–2024). **Ocean wave measurement for science outreach**. *Sip and Science, Graduate Student Exhibition*, Stonington, CT. (Exhibition)

[C.7] Akaawase, B.T., Agbakwuru, J.A., & Abam, J. (2022). **Spectral motion responses of P23 and W23 passenger boats**. *University of Port Harcourt Seminar Series*, Nigeria. (Virtual Talk)

[C.8] Akaawase, B.T., Agbakwuru, J., & Nwaoha, C. (2020). **West African offshore potentials and opportunities**. *5th Atlantic Interactions Dialogue*, Lagos. (Poster)

TECHNICAL CONTRIBUTIONS

Stereo Imagery Wave Analysis *2023 – Present*
Python, OpenCV, Stereo Cameras
◦ Tracked wave breaking fronts and reconstructed 3D sea surface geometry

VR Ocean Engineering Platform *2020*
Unity, SolidWorks, Blender
◦ Built immersive VR modules for marine education, sponsored by Shell Nigeria

Wave Flume Demo System *2023*
Arduino, Python, 3D Printing
◦ Designed and programmed a tabletop wave flume for public demonstrations

Inspection & Certification *2019 & 2020*
Delta Steel Mining Company, Nigeria
◦ Inspected and certified 50 Electric Overhead Traveling Cranes for safety and operation

Virtual Reality Development *Nov 2020*
FUPRE, Sponsored by Shell Nigeria
◦ Developed immersive VR resources to enhance engineering education and outreach

FUNDED AWARDS

Pre-Doctoral Grant *2022*
University of Connecticut
◦ Awarded $500 to support early-stage doctoral research

Conference Travel Award *2024*
University of Connecticut
◦ Awarded $750 for conference participation and presentation

Fellowship *2024*
New Generation Marine Scientists and Stewards
◦ Received $1500 fellowship supporting marine science research

SKILLS

- **Programming Languages:** Python, MATLAB, C++, Bash
- **Web Technologies:** HTML, CSS, JavaScript (basic)
- **Data Science & Machine Learning:** NumPy, OpenCV, Scikit-learn, Pandas, Matplotlib, TensorFlow
- **Cloud Technologies:** Google Drive API, AWS S3 (basic)
- **DevOps & Version Control:** Git, GitHub, Docker (basic)
- **Specialized Area:** Digital Image Processing, Underwater Acoustics, Oceanographic Instrumentation, CAD Modeling
- **Mathematical & Statistical Tools:** SciPy, MATLAB, Excel, Curve Fitting, Time Series Analysis
- **Other Tools & Technologies:** SolidWorks, Carlson Surveyor, Wire-Walker, Seabird CTD, Stereo Imaging System, Lidar
- **Research Skills:** Field Deployment, Sensor Integration, Prototyping, Spectral Analysis, Scientific Writing, Data Visualization

HONORS AND AWARDS

-
  University Governing Council Award *2021*
  Federal University of Petroleum Resources
  ◦ Recognized for academic and leadership excellence

-
  International Education Summit Award *2020*
  International Education Summit
  ◦ Honored for contributions to global education

-
  Vice Chancellor's Prize *2017*
  Federal University of Petroleum Resources
  ◦ Best-graduating student

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  Most Outstanding Student *2016*
  College of Engineering, FUPRE

-
  Community Development Award *2019*
  NYSC, Nigeria
  ◦ For leading impactful local service projects

LEADERSHIP EXPERIENCE

-
  Graduate Mentor, Marine Air-Sea Lab *2022 – 2024*
  UConn
  ◦ Supervised undergraduate research on wave flumes, image analysis, and sensors

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  Teaching Assistant *2022 – 2023*
  UConn
  ◦ Led labs for Physics and Marine Science; supported student learning

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  Undergraduate Mentor *2022 – 2023*
  UConn Mentorship Programs
  ◦ Mentored students in research and academic development

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  Associate Consultant *2020 – 2021*
  The Offshore Lab, Nigeria
  ◦ Supported offshore system design and technical reports

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  Co-Convener, Training Program *Sept 2018*
  CMOS, Nigeria
  ◦ Organized offshore platform design training for students

VOLUNTEER EXPERIENCE

-
  Committee Member 2024
  CT Invention Convention [🌐]
  ◦ Supported event logistics and student engagement for statewide STEM showcase
-
  Organizing Committee 2018
  Nigeria Society of Engineers Week [🌐]
  ◦ Helped coordinate national engineering event and guest speakers
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  Spokesperson/Exhibitor 2022
  NERR Designation Celebration, Long Island Sound [🌐]
  ◦ Represented UConn to the public, during the designation of the center
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  Exhibitor 2024
  Ocean Sciences Meeting, New Orleans [🌐]
  ◦ Volunteered at The Oceanography Society and UConn Marine Sciences booths
-
  Student Committee Member 2024
  Faculty Search, UConn Marine Sciences & WISE zoominars
  ◦ Introduced candidates and collected student feedback during interviews
-
  Student Reviewer 2018 – 2021
  FUPRE Journal of Scientific and Industrial Research (FJSIR)
  ◦ Reviewed research articles to uphold journal quality and rigor
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  Student Reviewer 2023 – Present
  Journal of Geophysical Research
  ◦ Contributed to peer review of geophysical research manuscripts

PROFESSIONAL MEMBERSHIPS

- **The Oceanography Society**, Membership ID: 17933 — 2021 – Present
- **Association for the Sciences of Limnology and Oceanography**, Membership ID: 14942 — 2023 – Present
- **International Association of Engineers**, Membership ID: 262534 — 2020 – Present
- **Nigerian Society of Engineers**, Membership ID: G539512 — 2012 – Present
- **Marine Technology Society**, Membership ID: 30174 — 2016 – Present
- **Institute of Marine Engineering, Science and Technology**, Membership ID: 8054808 — 2015 – Present
- **IEEE; IEEE Geoscience and Remote Sensing Society**, Membership ID: 99364202 — 2023 – Present

CERTIFICATIONS

-
  Remote Pilot (Part 107) 2022
  Standard Training and Certification on Watch-Keeping (STCW)

REFERENCES

Available on request.