General Ozochiawaeze

108 South River Road, West Lafayette, IN 47906

☎ (+1) 832-533-7192 | ✉ gozochiawaeze@gmail.com | ⌨ obiorag.github.io | 🔗 linkedin.com/in/general-ozochiawaeze-568748139/

EDUCATION

Purdue University   *West Lafayette, IN*
PhD Candidate in Mathematics   *Aug 2021 - May 2026*
Research Interests: Inverse Problems, Partial Differential Equations, Scattering Theory, Computational Sensing, Shape Reconstruction
Awards: GEM Fellowship, NSF Computational Mathematics Program Award DMS-2208256

New Jersey Institute of Technology   *Newark, NJ*
M.S. in Applied Mathematics   *Sep 2019 - May 2021*
Awards: Graduate C/Startup Research Grant

Rutgers University   *New Brunswick, NJ*
B.A. in Mathematics & Philosophy   *Jan 2016-May 2018*
Honors: Tau Sigma Honors Society, Dean's List

SKILLS

Computing	Python, MATLAB, C++/C#, COMSOL, FeNiCs, LaTeX, Mathematica, Maple
Engineering	Signal Processing, Finite Element Methods, Scientific Computing, Deep Learning, Large-Scale Optimization, Systems Analysis, Mathematical Modeling, Technical Writing
Languages	English, French (Conversational), Latin

WORK & RESEARCH EXPERIENCE

Purdue University   *West Lafayette, IN*
Graduate Research Assistant (NSF-Funded Project)   *Aug 2023- Present*
- Explored and analyzed mathematical models for biharmonic wave interactions in clamped and free plates to improve non-destructive testing and structural integrity assessments.
- Led the development of custom algorithms to optimize scattering data analysis, improving efficiency in solving inverse problems.
- Refined non-iterative sampling strategies to reduce computational cost and improve the accuracy of obstacle reconstruction in scattering problems.
- Showcased insightful research findings at academic conferences and seminars.

MIT Lincoln Laboratory   *Lexington, MA*
Group 36 Research Intern – Integrated Missile Defense Technology   *May 2023-Oct 2023*
- Successfully applied compressive sensing techniques to enhance radar imaging for missile target detection, improving signal reconstruction accuracy and efficiency.
- Collaborated with a multidisciplinary team to integrate image processing methods into existing radar imaging frameworks.
- Presented compelling research findings on compressed radar sensing, demonstrating potential applications in enhanced defense technologies.

MIT Lincoln Laboratory   *Lexington, MA*
Group 37 Research Intern– Advanced Undersea Systems & Technology   *May 2022 - Aug 2022*
- Developed algorithms to analyze coherence loss in sonar signals, improving underwater detection and tracking capabilities.
- Applied advanced sonar array interferometry techniques to extract spatial information from acoustic wave-fronts, supporting improved source localization.
- Conducted extensive simulations and data analysis across twenty-five recorded datasets, assessing the impact of environmental factors on sonar signal coherence.

New Jersey Institute of Technology   *Newark, NJ*
Acoustic Simulation Researcher   *Jul 2020 - May 2021*
- Devised oceanographic models to simulate acoustic wave propagation in underwater environments, improving understanding of ocean acoustics.
- Critically utilized finite element methods and domain decomposition modeling to simulate high-frequency acoustic wave behavior in complex ocean conditions.
- Funded by a naval research grant associated with the NREIP, supporting research on high-frequency ocean acoustics in underwater environments.

New Jersey Institute of Technology   *Newark, NJ*
Autonomous Systems Researcher   *Jul 2020 - May 2021*
- Designed and tested algorithms for robot coordination and path planning, optimizing multi-robot performance in dynamic ocean conditions.
- Leveraged stochastic gradient descent to fine-tune robot control parameters, reducing computational overhead in real-time simulations.
- Contributed to experimental testing of multi-robot formations in simulated ocean environments, providing valuable insights for real-world ocean exploration.

TEACHING

Sum'24	**Graduate Teaching Assistant,** 'Introduction to Probability Theory (MA 416)'		*Purdue University*
Spr'24	**Instructor,** 'Multivariable Calculus (MA 261)'		*Purdue University*
Fall'21	**Instructor,** 'Plane Analytic Geometry & Calculus I,II (MA 161/162)'		*Purdue University*