

ISAAC CHUKWUNWIKI ENUMA

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Google Scholar: [Isaac Enuma - Google Scholar](#)

PROFILE SUMMARY

A passionate and resourceful civil engineering honors graduate with a proven interest in water treatment, hydrological modeling, and sustainable infrastructure. Skilled in machine learning and geospatial analysis for environmental solutions. Dedicated to research, teaching, and volunteering in the pursuit of a healthier planet.

EDUCATION

University of Benin, Benin City, Edo State, Nigeria

Jan. 2020 – Apr. 2025

Bachelor of Engineering (BEng.) in Civil Engineering

• **Grade:** 4.49/5.00 **Class rank:** 5 / 143 (Top 4%)

Key Courses: Advanced Hydraulics and Hydrology, Environmental Engineering, Fluid Mechanics, Soil Mechanics, Engineering Geology, Technical Communication, Applied Engineering Mathematics, Engineering Surveying.

RESEARCH INTERESTS / IMPACT AREAS

Sustainable Water Treatment

Fate of Contaminants

Coastal Water Quality

Resource Recovery

Machine Learning

Bio-remediation

RESEARCH EXPERIENCE

Research Assistant, Water Resources Laboratory, University of Benin

Feb. 2025 – Present

Principal Investigator: Prof. Ngozi Ihimekpen (20 hours per week)

- Assisted the Principal Investigator in preparing materials to support grant applications.
- Conducted in-depth analyses of published literature and skillfully crafted literature reviews, primarily focused on converting waste biomass into valuable added products.
- Facilitating the supervision and mentorship of undergraduate research students under the guidance of the Principal Investigator.
- Performed hydrological analysis using SRTM DEM data to map drainage networks and density.
- Designed and implemented a geospatial model integrating 7 flood-controlling factors (elevation, slope, rainfall, drainage density, soil type, land use, and proximity to rivers) using ArcGIS and remote sensing data (SRTM, Landsat 8).

Undergraduate Research Assistant, Water Resources Laboratory, University of Benin

Sept. 2023 – Jan. 2025

Principal Investigator: Dr. Ehi Oria-Usifo (24 hours per week)

- Conducted research on using plants (water hyacinths, Vetiver Grass and Water Lettuce) as a low-cost phytoremediation method for treatment of polluted water samples.
- Assisted in system fabrication using locally sourced materials (clay-coated filters, activated carbon, cotton wool) and optimized aeration rates to enhance microbial degradation of organic pollutants.
- Prepared technical reports summarizing experimental outcomes, including recommendations for integrating phytoremediation with conventional treatment systems.
- Compared machine learning models (Random Forest, SVM, ANN) to assess the efficacy of Moringa oleifera seeds in drinking water treatment.
- Gained experience in integrating knowledge and techniques from various disciplines such as biochemistry, data science, and experimental optimization, enabling a holistic approach essential for handling water treatment methods.

WORK EXPERIENCE

Department of Civil Engineering Laboratory, Benin City, Edo State, Nigeria

Feb. 2025 – Present

Laboratory Assistant

- Collaborated with Engr. Eghareva Etinosa in the planning and execution of a spectrum of Civil engineering laboratory experiments.
- Assisted in overseeing laboratory instruments and equipment, encompassing their operation, calibration, and maintenance.
- Demonstrated strong communication and teaching skills by providing hands-on instruction and guidance to junior undergraduate students during laboratory practical session.

Undergraduate Internship – Student Industrial Work Experience Scheme (SIWES)

- Performed setting out, leveling checks ($\pm 5\text{mm}$ tolerance), and daily progress monitoring against project schedule.
- Managed material quantity reconciliations (blocks, cement, sharp sand, reinforcement), reducing wastage by 15% through improved tracking.
- Developed a Python-based block quantity calculator that optimized material procurement and was adopted company-wide for most projects.
- Identified and resolved structural/formwork issues, contributing to zero safety incidents during construction.

TEACHING EXPERIENCE**Teaching Assistant - Hydraulics Engineering****Feb. 2025 - Present**

Department of Civil Engineering, University of Benin, Nigeria.
Lecturer - Dr. Ehi Oria-Usifo

- Assisting in conducting hydraulics laboratory sessions, guiding students in experiments related to fluid mechanics and pipe flow analysis for 2 consecutive semesters.
- Assisting in reviewing and organizing course materials, including lecture slides and problem sets, under instructor supervision.
- Supporting exam invigilation and monitoring student submissions to maintain academic integrity during tests and examinations.

Civil Study Academic tutor, University of Benin, Edo State, Nigeria**Jul. 2024 – Feb. 2025**

Tutored over 50 students in courses such as Engineering drawing (MEE 211 & MEE 221), Engineering Mathematics (EMA 381), Fluid Mechanics (MEE 361), and Hydraulics and Hydrology (CVE 421).

PUBLICATIONS

1. Oria-Usifo, E., **Enuma, I. C.**, Edward, I., Okafor, D., Segun, B., Ukpai, U., & Ajayi, A. (2025). Removal of hydrocarbon from produced water by phytoremediation method, using water hyacinth (*Eichhornia crassipes*). *International Journal of Scientific Research in Civil Engineering*, 9(3), 17-25. [View Here](#)
2. Oria-Usifo, E., Edward, I., **Enuma, I. C.**, Ukpai, U., Ayankoso, S., & Abdullahi, R. (2025). Development of a membrane bioreactor system for the efficient removal of non-biodegradable organics and toxic compounds from produced water. *European Journal of Advances in Engineering and Technology*, 12(6), 26-33. [View Here](#)
3. Uchenna Ukpai, **Enuma I.C.**, Daniel Ulokaji, Aisosa Edokpayi, & Idonije Edward. (2025). Sustainable Water Infrastructure for Urbanizing Regions: Design and Validation of Aba North's Multi-Component Supply System. *International Journal of Scientific Research in Civil Engineering*, 9(4), 06-19. [View Here](#)

SKILLS AND INTERESTS

- **Technical Skills:** Proficient in Microsoft Packages (Word, PowerPoint, Excel, and Outlook), BioWin, ArcGIS, R, Python, JavaScript, MATLAB, PHP, MySQL, AutoCAD, Data Science.
- **Research Skills:** Electronic reference management, Excellent use of Google Scholar, Design of Experiment, Response Surface Methodology, Box-Behnken Design, Artificial Neural Network, Support Vector Machines, Manuscript and Grant Writing Skills.

AWARDS

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| • Midwestern Joint Venture Oil and Gas Undergraduate Scholarship | 2022 – 2025 |
| • Access to Success Foundation Undergraduate Scholarship Award | 2021 – 2025 |
| • Delta State Government Scholarship Undergraduate Bursary | 2021 – 2025 |
| • Monday Onyeme Foundation Undergraduate Scholarship | 2021 – 2024 |
| • Anioma Association in USA Undergraduate Scholarship, Georgia Chapter | 2022 |

LEADERSHIP EXPERIENCE

Operations Director

Apr. 2024 – Jan. 2025

Data Science Nigeria, UNIBEN Chapter.

- Managed daily operations for a 50+ member student organization focused on python applications in Engineering.
- Organized technical workshops and hackathons that increased member participation by about 30% semester-over-semester.
- Established partnerships with faculty and industry professionals to secure cloud computing access.

Student Ambassador

Jul. 2023 – Jan. 2025

Microsoft Learn Student Association, UNIBEN Chapter.

- Served as an official representative promoting Microsoft technologies and developer tools across campus.
- Organized and facilitated workshops on Azure, GitHub, and other Microsoft platforms for 100+ students
- Mentored 20+ students in obtaining Microsoft student ambassadorship and technical badges.

Financial Secretary

Mar. 2023 – Dec. 2023

Association of Civil and Structural Engineering Students (ACSES), UNIBEN.

- Responsible for collection and recording of departmental dues for over 600 students.
- Allocated appropriate funds to required activities while maintaining transparency and Accountability.
- Developed a Dues payment web application during my tenure as financial secretary which sped up payment by about 50% and generated a total of 28,600 naira as revenue for the association from service charges.

VOLUNTEERING EXPERIENCE

Scholar, Student Volunteer and Member

Jan. 2021 – Present

Access to Success Foundation (A2S), USA.

- Volunteered as an after-school tutor for underprivileged children, assisting in core subjects (math, English, sciences) to improve academic performance.
- Participated in IDP camp visits, distributing food, school supplies, and essential aid to displaced families.
- Volunteered as a camp facilitator, organizing activities, mentorship sessions, and team-building exercises for youth.

DEVELOPMENT / CERTIFICATION

- Research and Proposal Writing in the Sciences
- Python Fundamentals by SimpliLearn
- MATLAB Fundamentals by MathWorks
- Fundamentals of Manuscript Preparation
- An Editor's Guide to Writing a Review Article

PROFESSIONAL ASSOCIATIONS

Collegiate Member, National Society of Black Engineers (NSBE)

2025 - Present

Member, American Society of Civil Engineers (ASCE)

2023 - Present