

SUMMARY OF COMPETENCIES

- Four years of experience in managing scientific projects and applying statistical data analysis techniques, quantum chemical methods, and high-performance computing to solve research problems and accelerate the discovery of novel materials to combat global challenges in clean energy.
- A tangible record of successful collaborations and completion of independent projects through publications in journals and conference presentations
- Adept at the use of analytical tools (Python, Excel, SQL, Tableau, Git) and state of the art machine learning techniques.

EDUCATION

Doctor of Philosophy (Ph.D.), Chemical Engineering

Expected graduation May 2023

GPA: 3.98/4.0

Tulane University, New Orleans, LA

Master of Science, Chemical Engineering

May 2022

GPA: 3.98/4.0

Tulane University, New Orleans, LA

Bachelor of Science, Chemical Engineering

June 2016

First class Honors

Covenant University, Nigeria

EXPERIENCE

Graduate Research Assistant

2018 – Present

Department of Chemical Engineering, Tulane University, New Orleans, LA

- Successfully designed, implemented, and reported outcomes of five projects over a four-year period, ensuring efficient use of resources and minimizing rework.
- Developed a predictive, interpretable model to understand the factors that control oxophilicity and carbophilicity in pure metal surfaces.
- Developed a general, reusable model to screen alloy surfaces for various catalytic reactions.
- Created high standard data visualization outputs using software such as Python, Tableau, and Microsoft power-point.
- Gave theoretical guidance to experimentalists by performing quantum-chemical calculations and structural analysis of catalytic systems.

Scientific Software Developer & Materials Data Scientist (PhD intern)

Summer 2022

Enthought Incorporation, Austin, TX

- Developed machine learning solutions to tackle polymer formulation scale-up issues for a client R&D company, saving them about \$90,000 per formulation scale-up.
- Created a machine learning framework to help lab researchers optimize polymer film thickness and also to understand some of the factors that determines this thickness.

Analytics Consultant

2018

Krosk Partners Limited, Lagos, Nigeria

- Transformed financial data into insights that informed, identified trends, answered questions and provided recommendations based on project specific goals.
- Researched, analyzed market trends, and collaborated with traders to develop optimal market strategies.
- Contributed to team building, client retention, and business goodwill through prompt delivery of project assigned responsibilities

Graduate Assistant**2016 – 2017****University of Lagos (Unilag), Lagos, Nigeria**

- Performed literature searches and contributed to various research projects.
- Mentored undergraduates through the Unilag Counseling outreach.
- Contributed and organized several student developments programs such as Academic Fairs, Career conferences e.t.c.

Production Engineer (Intern)**2015****Addax Petroleum, Lagos, Nigeria**

- Contributed to the development of predictive models for asset production based on reservoir indicators.
- Gained skills training in Asset integrity and well work executions.
- Performed Asset integrity audits on Pressure safety valves (PSV's) for all the company's producing assets.
- Used SQL, Excel, to monitor daily asset productions and equipment performance.

SKILLS

- Excellent analytical, teamwork, and communication skills.
- Proficient with MS Office (Word, Access, Excel, PowerPoint), Tableau, SQL, Python, Git, MATLAB.
- Expertise in machine learning, deep learning, data science and data visualization.
- Adept at quantum-chemical simulations, high-performance computing and computational chemistry.

EXTRA-CURRICULAR ACTIVITIES

- Partnered with the United States Army eCYBERMISSION STEM education initiative as a volunteer judge for science competitions from 2019 to present
- Mentored undergraduates in computational materials research at the Tulane SMART REU program.
- Teamed with undergraduate students at Tulane University as volunteer instructors to support the STEM NOLA education initiative for K-12 students in New Orleans communities.
- Vice president at Tulane's chapter of the National Society of Black Engineers.
- Volunteer at Louisiana FIRST® LEGO® League (FLL) Robotics State Championship.

AWARDS

- 2022 Graduate scholarship, Society for Mining, Metallurgy & Exploration.
- 2022 NSBE Fulfilling Legacy Award, National Society of Black Engineers
- 2022 NSBE BCA/Affiliate/ Fellows Scholarship, National Society of Black Engineers
- 2021 AADE Scholarship Award, American Association of Drilling engineers
- 2021 Anchor Achievement Scholarship Award, Pilot International Inc
- 2021 National Association of Surface Finishing Graduate Award, NASF Foundation
- 2021 NSBE BCA/Affiliate/ Fellows Scholarship, National Society of Black Engineers
- 2020 AKA EAF Graduate Awards, Alpha Kappa Alpha Educational Advancement Foundation
- 2020 AADE Scholarship Award, American Association of Drilling engineers
- 2020 NSBE Apex Scholar, National Society of Black Engineers
- 2020 Anchor Achievement Scholarship Award, Pilot International Inc
- ISA PMCD Scholarship Award, International Society of automation
- Graduate Achiever Scholarship Award, Honor Society
- National Association of Surface Finishing Graduate Award, NASF Foundation
- Rosagene Huggins Memorial Award, ESA Foundation
- Serc Endowment Award, ESA Foundation
- First Class Honors, Covenant University
- Award of Excellence, Covenant University

PROJECTS

- Design of A Plant for Production of 48,000 Kg/Day of Methyl Ethyl Ketone by Vapour Phase Catalytic Dehydrogenation of 2-Butanol. (Team lead for Undergraduate design project)

CONFERENCES

- 2021 NOBCCHE Conference. (Oral Presentation)
- 2021 ACS Spring Conference. (Oral Presentation)
- 2020 Annual AIChE conference. (Oral Presentation)

PUBLICATIONS

- Kayode, G. O., Montemore, M. M. Factors controlling Oxophilicity and Carbophilicity of Transition Metal and Main Group Metals. *J. Mater. Chem. A*. 2021.
- Kayode, G. O., Zhang S., Montemore, M. M. Linking electronic structure to adsorption energies: Metal surfaces and single-atom catalysts. *Catalysis Vol. 34*. Royal Society of Chemistry. 2022
- Montemore, M. M., Nwaokorie, C. F., Kayode, G. O. General screening of Surface Alloys for Catalysis. *Catal. Sci. Technol.* **2020**, *10* (13), 4467–4476.
- Ojewumi, M. E., Kayode, G. O., Omoleye, J., & Oyekunle, D. T. (2019). Statistical optimization and sensitivity analysis of rheological models using cassava starch. *International Journal of Civil Engineering and Technology (IJCET)*, *10*(1), 623-639
- Kayode, G. O., Montemore, M. M. Latent variable Machine learning framework for catalysis. *In Review*. 2022.
- Wang, J., Kayode, G. O., Hirayama, Y., Ogino, I., Montemore, M. M., Gazit, O. M. Interface between thin MgAlO_x and ZrO₂ identified as a stabilizing site for highly active Ni catalyst in the DRM. *In Review*. 2022.