

Kamal Adekola

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Born on June 14, 1996 | Ilorin, Nigeria

Education

Institut Mines-Télécom Atlantique, Nantes, France.

Master of Science, Project Management for Energy Engineering September 2023

- Fully funded Erasmus Mundus Joint Master's Degree Program (ME3+)
- **Specialization** - Smart Cities and Industry 4.0
- **Thesis** - Techno-economic optimization of a green hydrogen hub for the decarbonization of metropolitan vehicle fleet

University of Bolzano, Italy, and University of Trento, Italy (joint master's program)

Master of Science in Energy Engineering September 2023

- Through the Erasmus Mundus Joint Master's Degree Program (ME3+)
- **Specialization** - Building Energy Systems

University of Ilorin, Ilorin, Nigeria

Bachelor of Engineering in Mechanical Engineering September 2018

- Specialization - Thermofluids Engineering
- **Thesis** - Design and construction of a parabolic solar collector with an automated solar tracker

Research Experience

Delft University of Technology (TU Delft).

Delft, The Netherlands

PhD candidate in the Faculty of Technology, Policy, and Management October 2023 - Present

- **Research group** - Energy & Operations Research.
- **Research focus** - Risk allocation in interconnected electricity markets. My research integrates methods from operations research, game theory, economics, and power systems to evaluate policy decisions and explore innovative market designs. Specifically, I formulate generation expansion and economic dispatch problems as non-cooperative games and convex optimization problems, emphasizing the interconnected nature of European electricity markets.

ABMI Engineering

Nantes, France

Energy Modeling Intern (R&D) February 2023 - August 2023

- Development of a Python-based simulation tool for site-specific modelling and optimization of green hydrogen hubs to minimize the levelized cost of hydrogen. The tool uses mathematical programming formulated as an LP implemented using Python/Pyomo environment and solved with Gurobi/GLPK solvers.
- Investigation of intermittent renewable energy sources for green hydrogen production, assessing their potential, limitations, and effectiveness. Used relevant libraries such as pvlib and windpowerlib to model renewable energy production from weather data.
- Developed energy system configurations for green hydrogen hubs, conducting scenario analyses and exploring the impact of relevant parameters on green hydrogen costs.

University of Ilorin

Ilorin, Nigeria

Undergraduate Research Assistant November 2017 – August 2018

- Carried out design, simulation, and construction of a parabolic trough solar collector as well as testing and performance evaluation as a renewable energy resource.

Professional Experience

SplitSpot Inc. Boston, United States (Remote)

Data Analyst

December 2020 - August 2021

- Proposed and spearheaded the design and implementation of SplitSpot data warehouse and analytics pipeline (using BigQuery, DBT, Google Sheets, JavaScript, and Data Studio) as the first member of the data team.
- Analyzed company data to deliver insights to the sales and marketing team and leadership team weekly, leading to 3X sales in 2021 vs. 2020.
- Developed a supervised machine learning model to predict the attractiveness of apartments to specific categories of tenants.
- Supported the management team in strategic analysis sessions using techniques such as SWOT Analysis and systems thinking approach.

African Alliance Plc. Lagos, Nigeria

Data Analyst

February 2020 - October 2020

- Performed data collection, cleaning, and structuring data and utilized exploratory data analysis, visualizations, and statistical techniques to uncover trends and insights.
- Prepared and conducted surveys across various customer segments to obtain information on customer satisfaction leading to increased customer retention.
- Coordinated a team of 4 to propose and design a mobile app wireframe for increased digitalization of services, leading to an enhanced customer experience.

Ariosh Ltd Lagos, Nigeria

Project and Proposal Engineer (Graduate Program) *February 2019 - February 2020*

- Carried out the preparation of technical and commercial proposal documents for engineering projects utilizing best practices in scheduling and task tracking, enabling submission before deadlines 100% of the time.
- Coordinated with the project, finance, procurement, and engineering teams to ensure the smooth transition of projects from the initiation to the planning phase.

Leadership and Volunteer Experience

Power Rangers, TU Delft Delft, The Netherlands

Organizer

September 2024 – Present

- I plan and organize weekly talks on energy-related topics at the Energy & Industry section of TU Delft. Speakers range from faculty to visiting researchers and PhD candidates.

Omdena Inc. California, United States (Remote)

Junior Machine Learning Engineer

November 2020 – March 2021

- Collaborated with data scientists across the world to research and implement AI and ML techniques for social good by helping international organizations such as UNESCO, Save the Children, etc., to improve the efficiency of their operations.
- Project participated - Improving Case Management for Cross-Border Child Protection (<https://omdena.com/projects/ai-case-management>)

Nigerian Institution of Mechanical Engineers (Unilorin Chapter) Ilorin, Nigeria

Librarian / Executive Committee member

December 2017 – August 2018

- Co-founded and led the fundraising, planning, and organization of the maiden edition of NiMechE's Design Challenge, raising 150K Naira funds with the event attracting 20 qualified participants and an audience of over 400 people.
- Managed the departmental student library used by over 200 undergraduate students.

Honors and Achievements

Erasmus Mundus Joint Master's Degree Scholarship

2021 - 2023

- Flagship Master's program of the European Commission distinguished by its academic excellence and high level of integration. I ranked in the best 3% of students selected for the European scholarship based on academic excellence, professional and career objectives, and motivation for intercultural experience.

Jim Ovia Scholarship Award

2016 - 2018

- Awarded to outstanding undergraduate students across Nigerian universities. The scholarship is awarded to 100 undergraduate students yearly from a pool of more than 5,000 applicants.

Chevron National Merit Scholarship

2015 - 2018

- Awarded to the top-performing students in a dedicated aptitude exam conducted nationwide for first-year undergraduate students.

Publications

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- Electricity supply configurations for green hydrogen hubs: A European case study on decarbonizing urban transport. **K Adekola, S Ghafoori, F Dechamp, A Prada** - International Journal of Hydrogen Energy, 2024

Tools

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- Mathematical Programming – Convex Optimization, Equilibrium Modelling, Distributed Optimization, Game Theory
 - Computing – Julia, JuMP, Python, Pyomo & MATLAB.
 - Software – PyPSA, PLEXOS (limited proficiency)
 - Data Analytics and Machine Learning – Scikit-learn, SQL, DBT, Big Query
 - Data Visualization – Tableau, Power BI, Data Studio
 - Language Proficiency – English (Bilingual), French (limited proficiency)