

Joel Duah

35 Lower Hill Drive, Accra | +233-559-458-245 | Duahjoel8@gmail.com | <https://joel-portfolio-one.vercel.app/>

Objective

Results-driven environmental data analyst with hands-on experience in air quality monitoring, meteorological data modeling, and real-time analytics. Proven ability to build and deploy end-to-end data solutions, including predictive models, interactive dashboards, and scalable data. Adept at transforming complex environmental datasets into actionable insights for compliance, risk assessment, and strategic decision-making. Seeking to contribute to data-driven environmental innovation in industry settings focused on sustainability, technology, and regulatory compliance.

Experience

AIR QUALITY ANALYST | SYTRIX LABS LTD | AUG 2023 – TILL DATE

- Conducted statistical analysis of PM2.5, PM10, O3, NOx, CO, and VOC monitoring data
- Performed QA/QC validation on continuous air monitoring systems
- Developed data pipelines for processing raw atmospheric measurements
- Created predictive models using meteorological parameters and emissions data
- Designed interactive dashboards and visualizations for stakeholder reporting using R Shiny, Python and JavaScript
- Identified pollution trends through temporal and spatial pattern analysis
- Applied statistical methods to characterize source contributions
- Conducted compliance assessments against regulatory standards
- Performed uncertainty analysis and error quantification
- Developed methodologies for handling missing data and outliers
- Applied machine learning techniques for pollution forecasting

JUNIOR RESEARCHER | VIOLENCE RESEARCH CENTER, UNIVERSITY OF CAMBRIDGE, CAMBRIDGE-UK | APRIL 2023 – DECEMBER 2023

- Collected 5 minutes speech sample data via telephone calls for the 3rd wave of the Evidence for Better Lives Study (EBLS).
- Transcribe and translate (from source language into English) EBLS speech samples.
- Coded and analyzed EBLS data using thematic analytical techniques

RESEARCH ASSISTANT | GHANA CENTER FOR SUICIDE & VIOLENCE RESEARCH, ACCRA-GHANA | SEP 2023 – APRIL 2023

- Collected qualitative data via face-to-face and telephone calls.
- Transcribed interviews and developed themes for PIs
- Conducted literature reviews and assisted with the development of the research design.

RESEARCH ASSISTANT | R. F. INGLEHART LABORATORY FOR COMPARATIVE SOCIAL RESEARCH, MOSCOW-RUSSIA | SEP 2021 – JAN 2022

- Analyzed statistical data on Gender role attitudes (GRA) using R, Python and Excel.

- Identified GRA trends in cross-country data with strong analysis and data visualization skills.
- Employed hierarchical models and logistic regression techniques to analyze cross- country datasets.
- Worked closely with internal and external supervisors, ensuring high engagements in research and evaluation activities.
- Presented research findings at conferences with confident public speaking.

TEACHING & RESEARCH ASSISTANT | UNIVERSITY OF GHANA DEPT. OF SOCIOLOGY, ACCRA-GHANA | SEP 2019 – AUG 2020

- Prepared and delivered tutorials on diverse topics related to sociology
- Tutored students struggling with course material, improving understanding and academic performance
- Attended seminars and conferences to gain more insight in my field
- Assisted with data collection, data entry and data analysis.

Education

PHD AGEING STUDIES | 2024-DATE | UNIVERSITY OF GHANA, ACCRA-GHANA

- Related coursework: Ageing and Health, Environmental Gerontology, Social aspects of ageing, Advanced quantitative research methods, Advanced qualitative research methods

MA COMPARATIVE SOCIAL RESEARCH | 2020-2022 | NATIONAL RESEARCH UNIVERSITY HIGHER SCHOOL OF ECONOMICS, MOSCOW-RUSSIA

- GPA: 7.96/10
- Related coursework: Digital finance, Social network analysis, Categorical data analysis, Structural equation modeling, Measurement theory and questionnaire design, Introduction to data science in Python, Multilevel regression analysis, Interrupted time-series analysis, Basic and advanced statistics in R

BA RUSSIAN AND SOCIOLOGY | 2014-2019 | UNIVERSITY OF GHANA, ACCRA-GHANA

- GPA: 3.33/4
- Related coursework: Business Russian, Comparative Russian Politics, Translation, Social Structure of Modern Ghana, Theories of Social Development, Industrial sociology, Research Methods, Quantitative research methodology etc.

B1 CERTIFICATE. RUSSIAN AS A FOREIGN LANGUAGE | 2017-2018 | BELGOROD STATE TECHNOLOGICAL UNIVERSITY, BELGOROD-RUSSIA

- Related coursework: Russian language, Russian literature, Social studies, History of Russia, Musical phonetics

Skills & Abilities

- Web applications and analytical dashboards development
- Programming Languages: Python, R, Shiny, JavaScript, MySQL, HTML, CSS,
- Quantitative research designs and Advanced statistical analyses
- Data Visualization Tools: Power BI, Excel, Tableau
- Excellent writing skills/data storytelling/reporting
- Good oral and written communication

- Strategic and analytical thinking

Software Development Projects

- **GOCEMS App:** Developer
 - An infrastructure for real-time continuous emissions monitoring in Ghana
- **Klin Air:** Developer
 - An open-source user friendly web application for analyzing user-uploaded air quality data
- **SpacioVue:** Developer
 - A useful application utilizing satellite data and openairmaps for source identification and source apportionment of harmful pollutants

Volunteering

- R Programming Language Tutor| East Legon Worship Center| **2022 – Present**|
- Analyst, External Affairs Committee| NRU Higher School of Economics Student Council| **2021 – 2022**|
- Advocate, Ministry to Persons Living with Disability| East-Legon Worship Center| **2019 – Present**|
- Data Collection Specialist, Ghana Statistical Service |**2021**|
- Verification Officer, Electoral Commission of Ghana| **2020**|
- Peer Partner, International Programmes Office| University of Ghana| **2018 – 2019**|

Conferences

- Shiny Conference 2025 |Speaker| Organized by Appsilon|
- University of Ghana-Columbia University Air Quality Data Analysis Workshop for West African Professionals| 2025| Participant|
- Air Sensors International Community - USA Conference. |2024| Attendee|
- Air Sensors International Community - Ghana Conference. |2023| Attendee|
- International Workshop "Recent Advances in Comparative Study of Values (LCSR, XXII April International Academic Conference on Economic and Social Development |2021|

Awards & Certificates

CERTIFICATE OF PARTICIPATION| VIDEO SURVEILLANCE ANALYST|2024|

- 13th All African Games, Accra-Ghana

CERTIFICATE IN AIR QUALITY MANAGEMENT AND SCIENCE TRAINING|2024|

- University of Ghana with support from the U.S. Department of State and Columbia University

MERIT-BASED RUSSIAN GOVERNMENT AND HSE SCHOLARSHIP|2020|

- Towards a Master's degree in Comparative Social Research

INTRODUCTION TO STRUCTURED QUERY LANGUAGE (SQL) |2022|

- University of Michigan (Coursera certificate)

INTRODUCTION TO DATA SCIENCE IN PYTHON |2022|

- University of Michigan (Coursera certificate)

1ST PLACE, RUSSIAN LANGUAGE AND CULTURE COMPETITION FOR INTERNATIONAL STUDENTS |2018|

- Belgorod State Technological University, Belgorod-Russia

2ND PLACE, RUSSIAN LANGUAGE ESSAY AND COMPETITION ON THE TOPIC “TERRORISM: A CONTEMPORARY GLOBAL ISSUE” |2018|

- Belgorod State Technological University, Belgorod-Russia

3RD PLACE, RUSSIAN HISTORY COMPETITION FOR INTERNATIONAL STUDENTS |2018|

- Belgorod State Technological University, Belgorod-Russia

Affiliations

- Church of Pentecost Ministry to Persons Living with Disability | 2019 – Present | Member |
- Air Sensors International Community | 2023 – Present | Member |

Language Proficiencies

- English *****
- Akan (Twi) *****
- Russian *****
- German *****