

# Janice Agyeiwaa Owusu

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## Professional Summary

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Geomatics professional with expertise in GIS, LiDAR processing, remote sensing, and spatial data analysis. Strong background in field surveying, GPS data collection, and geospatial database management. Proficient in ArcGIS Pro, QGIS, PostGIS, Python, R, and SQL. Passionate about leveraging spatial technology to address environmental challenges including illegal mining and land disputes in Ghana and beyond.

## Education

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**Master of Geomatics for Environmental Management (MGEM)** Vancouver, BC, Canada  
*University of British Columbia* Expected April 2026

Capstone: Multi-temporal airborne LiDAR analysis of forest canopy gap dynamics (2012–2022) — Coursework: Remote Sensing, Spatial Statistics & Modeling, GIS for Environmental Management, Python & R Programming

**Bachelor of Science, First Class Honours – Geomatic Engineering** Kumasi, Ghana  
*Kwame Nkrumah University of Science and Technology (KNUST)* August 2024

CGPA: 3.94/4.0 — Top 1% of 166 students — Thesis: Design and Implementation of a Campus Navigation System at KNUST

## Professional Experience

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**Junior Intelligent Network Operations Analyst** Accra, Ghana  
*Telecel Ghana – Intelligent Network Department* Sept 2024 – July 2025

- Managed data quality control for telecommunications systems serving 6M+ subscribers
- Developed Python scripts (Paramiko, Pandas) to automate data collection and monitoring, improving efficiency of data management processes
- Processed Call Data Records (CDRs) for 7M+ subscribers using Kafka; contributed to ETL pipeline for customer loyalty platform
- Produced weekly technical reports analysing system performance data

**Data Analyst Intern** Missouri, USA (Remote)  
*Deep Metrics Inc.* Oct 2022 – Dec 2022

- Processed large-scale datasets for computer vision and transportation analytics projects
- Conducted quality assurance on field-collected data and prepared annotated datasets for AI model training
- Contributed to model evaluation pipelines for detecting moving vehicles and pedestrians

**Geomatic Engineering Intern** Asamankese, Ghana  
*Town and Country Planning Department* Oct 2021 – Dec 2021

- Conducted field surveys using GPS and total stations for cadastral mapping and boundary delineation
- Prepared site plans and technical drawings using AutoCAD for municipal planning and infrastructure projects
- Performed spatial analysis of land records to identify encroachment patterns and documentation gaps
- Integrated GPS field data into GIS databases and created maps for land-use planning

## Projects & Research

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**Forest Canopy Gap Dynamics Analysis using Airborne LiDAR** Dec 2025 – Feb 2026  
*University of British Columbia* [project link](#)

- Processed multi-temporal airborne LiDAR point cloud data (2012–2022) to assess forest structure changes
- Created DEMs and Canopy Height Models using R-based geospatial analysis workflows and spatial statistics
- Conducted data quality control on remote sensing datasets and documented processing methodologies

**LiDAR Forest Attribute Mapping - Alex Fraser Research Forest** Feb 2026  
*University of British Columbia* [project link](#)

- Developed a full airborne LiDAR processing pipeline in R using lidR and terra
- Built stepwise regression models to predict aboveground biomass and dominant height.
- Generated wall-to-wall prediction maps at 10 m resolution across the full forest extent

### Terrain Hazard Screening of Harvested Cutblocks

Dec 2025

*University of British Columbia*

[project link](#)

- Derived terrain metrics (slope, TWI, RTPI, flow accumulation) from a 30 m DEM using Python and WhiteboxTools
- Built a weighted terrain hazard index and overlaid harvested cutblocks to assess geohazard exposure
- Identified that cutblocks in the AOI predominantly fall within low-to-moderate hazard terrain

### Campus Navigation System

May 2024 – Aug 2024

*Kwame Nkrumah University of Science and Technology*

[project link](#)

- Co-developed web-based GIS navigation application serving 85,000+ users with real-time routing capabilities
- Managed spatial database of building locations, road networks, and points of interest
- Conducted extensive GPS field data collection and integrated geocoded data into the system

### Community Land Documentation & GPS Training Initiative

Sept 2024

*Town and Country Planning Department, Asamankese*

- Coordinated workshops training 100+ community members on GPS navigation and spatial data collection
- Created cadastral maps from field-collected GPS data to resolve approximately 10 reported land dispute cases

### GSuite Geospatial Application

Sept 2022 - Dec 2022

*Open-source team project*

[project link](#)

- Co-developed a desktop application for geospatial analysis and visualization using open-source geospatial libraries
- Built tools for reverse geocoding, file format conversion (CSV, DXF, SHP, KML), coordinate system management, and geomatic computations

## Technical Skills

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- **GIS Software:** ArcGIS Pro, QGIS, ArcGIS Online, PostGIS, Leaflet, OpenLayers
- **Remote Sensing & LiDAR:** Airborne LiDAR processing, aerial imagery analysis, satellite imagery, DEM/CHM creation, Drone2Map
- **Programming:** Python (GDAL, GeoPandas, Pandas, Rasterio), R (spatial analysis), SQL, JavaScript
- **Database Management:** PostgreSQL, PostGIS, MongoDB, spatial databases, data quality control
- **Field Technologies:** GPS/GNSS, Total Stations, cadastral mapping, field data collection
- **Other Tools:** FME, AutoCAD, Git, Microsoft Office, LaTeX, Linux

## Certifications

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- ESRI Training: Geographic Information Systems, ArcGIS Pro, Remote Sensing (2025)
- FME Academy: Integrate Data with the FME Platform (2025)
- Innovation for African Universities Training – IAU (2023)

## Awards & Leadership

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- **Mastercard Foundation Scholarship Program** – Mastercard Foundation, UBC (2025): Full scholarship awarded to exceptional students from Africa for master's program at UBC
- **Female Engineering Students Sponsorship Program** – Telecel Ghana (2024): Awarded to top 10 female engineering students across top 5 universities in Ghana
- **Best Student Award** – College of Engineering, KNUST (2023): Top scorer in a class of 154 students
- **Excellent Student Award** – College of Engineering, KNUST (2023): Awarded to students with CWA of 75 and above
- **Organizing Secretary**, Association of Geomatic Engineering Students (AGES) Programmers Club, KNUST (2023)