**Ibrahim Ademola ADENIRAN**

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Email: [ibrahim.adeniran@connect.polyu.hk](mailto:ibrahim.adeniran@connect.polyu.hk) | LinkedIn: [www.linkedin.com/in/adeniran-ia](http://www.linkedin.com/in/adeniran-ia) |­ website: www.ibrahimadeniran.com

Tel: (M) +852-59816535

# Research Interest

Climate Change

Urban Thermal environment

Forest and Vegetation remote sensing

Machine Learning and Artificial Intelligence

# Educational Qualification

**Ph.D. Remote Sensing and Geoinformatics**, Hong Kong Polytechnic University, Hong Kong expected July 2024

Dissertation: Integrated Remote Sensing and Machine Learning Model for Urban Heat Island Analysis

Committee: Prof. LIU Zhi-zhao, George (chair), Dr. ZHU, Xiaolin (member), Prof.WONG Man-sing (supervisor)

**MTech Urban and Regional Planning** (Distinction), Federal University of Technology Akure, Nigeria July 2020

Thesis: Assessment of Infrastructural Challenges in the Coastal Communities

Advisor: Professor Julius Fasakin

**BTech Urban and Regional Planning** (First Class Hons), Federal University of Technology Akure, Nigeria Sept. 2016

Thesis: Adaptation Strategies for climate change effects in coastal communities of Ondo State, Nigeria

Advisor: Doctor Olusola Popoola

# Certificate Program

**Advanced Google Data Analyst**, Google Jan 2024

Machine Learning Model for Employee Turnover Prediction

**Nanodegree in Machine Learning Fundamentals**, Amazon Web Science Sept. 2023

Predict Bike Sharing Demand with AutoGluon

Developing a Handwritten Digits Classifier with PyTorch

**Nanodegree AI Programming with Python**, Amazon Web Science March 2023

Landmark Classification & Tagging for Social Media

Built a ML Workflow For Scones Unlimited On Amazon SageMaker

# Research/Teaching Experience

**Research Associate**

Hong Kong Polytechnic University, Hong Kong (Remote Sensing Laboratory) Sept. 2023 – Present

Supervisor: Prof. WONG Man-sing

* + - Involved in data collection, processing, and drafting research manuscripts for major projects, including:
    - Study of Carbon Sequestration in Hong Kong’s Vegetation (a collaborative research project) funded by the Research Grants Council (RGC) of Hong Kong
    - City-Scale seamless near surface temperature data development project.
    - Organize field surveys for data collection, analyse collected data, and draft journal articles based on findings.
    - Provide guidance and lecture to research assistants, Master’s students, and newly enrolled Ph.D. students.

**Research/Teaching Assisstant**

Hong Kong Polytechnic University, Hong Kong Sept. 2020 – Aug. 2023

Supervisor: Prof. Prof. WONG Man-sing

* + - Conduct novel research in Urban thermal comfort, and vegetation studies including:
    - Smart City Tree Management Project funded by the Jockey Club
    - Integrated knowledge-based Remote Sensing and Machine Learning model for the urban thermal environment
    - Participate in teaching assignments and coordination of tutorials for undergraduate students in subjects including:
    - Geoprocessing systems (LSGI2224)
    - Geographic Information Science (LSGI2223)

**Visiting Researcher**

Queens University, Canada Laboratory of Geographic Information and Spatial Analysis Oct. 2022 – March 2023

Supervisor: Prof. DONGMEI Chen

* Work closely with group members to develop an innovative object-based segmentation algorithm.
* Attend group meetings to listen to or give presentations on research progress or new frontiers in planning and remote sensing research.

# Industry Experience

**GIS Analyst**

Rideau Trail Association. Ontario, Canada Oct. 2022 – March 2023

Supervisor: Rusty Bassarab

* + - Generate a digitized map for the Rideau Rail Track in Ontario using ArcGIS Pro

**GIS Analyst and intern Supervisor**

Toyin Ayinde & Associates, Lagos Nigeria. Sept. 2020 – Aug. 2023

Supervisor: Tpl. Olutoyin Ayinde

* + - Draft creative alternative conceptual plans for layout designs based on client briefs.
    - Conduct site supervision and pilot UAV drone for mapping and site surveys.
    - Supervise, train, and develop course modules for interns and industrial training students.
    - Carry out spatial and locational analysis of project sites using ArcGIS, Golden Surfer, and other analytical tools.
    - Conduct environmental impact assessments.

**Intern**

Toyin Ayinde & Associates, Lagos Nigeria. June. 2015 – Dec. 2015

Supervisor: Tpl. Olutoyin Ayinde

* + - Attend training sessions on various environmental and physical planning design software and technical skills.
    - Utilize acquired skills for layout design, site analysis, and field surveys.
    - Participate in various office management and design activities.

# Publications (September 2018 - Present)

**Journal Publications**

Adeniran, I., Otokiti, K. V., & Durojaye, P. (2020). Climate Change Impacts in a Rapidly Growing Urban Region–A Case Study of Ikeja, Lagos, Nigeria. *International Journal of Environmental Planning and Management*, *6*(1), 13-23.

Adeniran, I., & Otokiti, K. V. (2019). Characterization of climate change manifestation in Nigeria coastal community. *Climate Change*, *5*(20), 235-244.

Aduloju, O. T., Adeniran, I. A., Adedoyin, J. Urban violence and crime: a review of literature. *The Just City: Poverty, Deprivation and Alleviation Strategies* 332 – 357.

Adeniran, I. A., Zhu, R., & Wong, M. S. Cross-Comparison between Sun-Synchronized and Geostationary Satellite-Derived Land Surface Temperature: A case study in Hong Kong. *Remote Sensing* 2022, 14(18),4444.

Adeniran, I. A., Nazeer, M., Wong, M. S., Zhu, R., Yang, J. (2023). Improved fusion model for generating hourly fine scale land surface temperature data under all-weather condition. *International Journal of Applied Earth Observation and Geoinformation*, *XX*, (Resubmited).

Adeniran, I. A., Nazeer, M., & Wong, M. S.. (202X). Advanced Federated Learning Neural Network (FL\_NN) Framework for predicting Diurnal and Spatially continuous near surface air temperature from Optimized Land Surface Temperature Data: Case Study of Hong Kong*. Urban Climate*, *XX*, (under review).

Adeniran, I. A., Nazeer, M., Wong, M. S., & Sanan, U. (202X). Ensemble Model Framework for Global and City Scale Air Temperature Prediction Using Satellite-Derived Surface Temperature and Auxiliary Data. *Sustainable Cities and Society*, *XX*, (under review).

**Conference Papers**

(Abstract-Reviewed)

Adeniran, I., and Wong, M. S. Practical Guidelines for Optimal Land Surface Temperature Data Fusion: A Case Study in Wuhan City. Proceedings of *SPIE Sensors + Imaging 2023*, Amsterdam, Netherlands. Sept. 03-06, 2023.

Adeniran, I., and Wong, M. S. An Improved Machine Learning Model for predicting Diurnal and Spatially continuous Canopy layer temperature from Optimized Land Surface Temperature: Case Study of Hong Kong. Proceedings of *AGU Fall meeting*, San Francisco, CA. Dec. 11-15, 2023.

# Personal Project in Progress

Predictive Modeling for Mangrove Conservation in West Africa

*Deliverables*

* A machine learning model capable of predicting mangrove loss in West Africa.
* Insights into the impact of environmental conditions on mangrove ecosystems through SQL data analysis.
* Interactive Tableau dashboards that effectively communicate findings.
* Recommendations for conservation efforts and policy changes to mitigate mangrove depletion.

# Affiliation

* Individual Member, International Society for Photogrammetry and Remote Sensing 2023 - present
* Student Member, the International Society for Optics and Photonics 2023 - present
* Student member, American Geophysical Union 2023 – present
* Member, The Emirati Society of GIS and Remote Sensing (20210267) 2023 - 2024
* Associate Member, Nigerian Institute of Town Planners (MNITP/4922) 2018 - present
* Registered Member, Town Planners Registration Council (RTP/4747) 2019 - present

# Awards

Sensors + Imaging Student Conference Support Jul 2023

***The International Society for Optics and Photonics***

PhD Studentship Funding, Department of Land Surveying and Geoinformatics Sept. 2020

***The Hong Kong Polytechnic University.***

Appreciation Award Jan. 2018

***Toyin Ayinde and Associate***

The Best Graduating Student, Department of Urban and Regional Planning March 2017

***Federal University of Technology, Akure.***

The First Student to Graduate with a First Class in the History of the Department March 2017

***Urban and Regional Planning, Federal University of Technology, Akure***.

The most Improved Student in the School of Environmental Technology Dec. 2015

***Federal University of Technology, Akure*.**

# Community Service

**Founder: SmartStudy Consult**  2023 - Present

A mentorship and Training institute for Undergraduate and Graduate Students

**Director of Programs: City Visionnaire** 2021 – Present

A non-governmental organization committed to empowering planning students and young professionals through career development, networking, and mentorship.

**Welfare Director: Association of Nigerian Scholars in Hong Kong** 2022 – 2023

A non-governmental Organization committed to the welfare of Nigerian scholars in Hong Kong

**Member, Research Committee: Nigerian Institute of Town Planners** 2018 – 2019

A professional organisation of registered town planners in Nigeria

# References

**Prof. DONGMEI Chen**

Phone: +1 613-533-6045

E-mail: chendm@queensu.ca

Department of Geography and Planning

Queens University

Canada

Relationship: Exchange Program Supervisor

**Sr Prof. WONG Man-sing, Charles**

Phone: +852 3400 8959

E-mail: lswong@polu.edu.hk

Department of Land Surveying and Geo-Informatics

The Hong Kong Polytechnic University

Hong Kong

Relationship: PhD Supervisor