**OSISIOGU, UKACHI OLUWASEUN**

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**Sex:** Male **Date of Birth:** February 04, 1994 **Marital Status:** Single

**Nationality:** Nigerian **State of Origin:** Abia **Religion:** Christianity

**ABOUT ME**

Ukachi is an intelligent, smart, industrious, highly-motivated and conscientious Computer Scientist, teacher and researcher.

**EDUCATION**

**African University of Science and Technology, Abuja, Nigeria Jan. 2018 – Jul. 2019**

Master of Science (MSc) Computer Science

**Nnamdi Azikiwe University (NAU), Awka, Anambra, Nigeria Oct. 2010 – Jul. 2015**

Bachelor of Engineering (B.Eng) Electronic and Computer Engineering

**EXECUTED PROJECTS & RESEARCH EXPERIENCE**

**African University of Science and Technology, Abuja, Nigeria**

**Cervical Cancer Detection and Classification for Resource-Constrained Devices.** Period: November 2019 – to date

The aim of this project was designed to address the lack of expertise for cervical cancer detection experienced by developing countries. Although an ongoing project we intend to build Convolutional Neural Network that will carry out the classification and detection tasks and deploy these algorithms to resource-constrained devices to enable the technology to be readily accessible to healthcare centres in rural areas. This model will be deployed on mobile phones using the TensorFlow Lite framework to improve access to this technology for rural areas.

**MSc Thesis Semantic Sentiment Analysis based on Probabilistic Graphical Models.**

Period: January 2019 – July 2019

The purpose of this project is to investigate the use of Probabilistic Graphical models to perform semantic sentiment analysis. The model was tested on a dataset obtained from Amazon Product reviews, IMDB Movie Review Dataset and Twitter Gold Dataset. Pre-processing of Textual Data and semantic representations were employed. The resulting data was then trained on two probabilistic graphical models – Bayesian Network Classifier, and a Hidden Markov Models. The peculiar nature of probabilistic graphical models demonstrates interesting results.

**Pipeline Surveillance and Leakage Detection System with IoT and UAV**

Period: July 2018 – August 2019

This project was carried out to investigate the effectiveness of cyber-physical systems and drone technologies to carry out surveillance and leakage detection tasks on an oil and gas pipeline. To achieve this, sensors, drones armed with cameras and computer vision algorithms built using deep learning models were employed. This research further demonstrated the capability for similar systems to improve monitoring and surveillance in the Nigerian oil and gas industry. In this project, I applied time series forecasting algorithms to predict possible events of leakages. I also implemented an anomaly detection algorithm using Long-Short Term Memory (LSTM) recurrent neural network.

**Data Science Nigeria, Lagos, Nigeria**

**Advanced Fee Fraud Message Detection**

Period: April – June 2019

This project was carried to address the issues of advanced fee fraud in Nigeria. By utilizing techniques in NLP and deep learning frameworks in TensorFlow a recurrent neural network architecture – LSTM model was created to detect certain syntactic features. The major role I played in this project was to ensure the data collected were pre-processed and was made ready for the deep learning algorithm to work on. I was also involved in the development of the recurrent neural network architecture coupled with the hyper-parameter tuning.

**Soil Humidity Prediction based on Time Series Forecasting Algorithms and IoT.**

Period: July 2019 – October 2019

In this project time, forecasting algorithms were employed to perform time series prediction. The Dataset I used in this project was obtained from readily available sensors on IoT kits to obtain air temperature, air humidity, and wind speed. I tested and experimented to get the best predictive model using feature engineering, the application of ensemble machine learning methods, time series prediction algorithms (including statistical approaches and with neural networks). Further research seeks to apply these methods to facilitate the prevention of drought in drought prone geographical areas.

**Nnamdi Azikiwe University (NAU), Awka, Anambra, Nigeria**

**Undergraduate Research Project: Development and Construction of a Low-Cost Oscilloscope using Arduino**

Period: April 2015 – October 2015

This project was carried to demonstrate how embedded systems can be harnessed to carry out measurements. With digital signal processing techniques, a special amplifier and with a PC screen interesting results were discovered. Close approximations to more costly oscilloscopes were obtained. The overall objective is to create a measuring device for embedded systems without the actual need of an oscilloscope

**PUBLICATIONS**

[1] U. Osisiogu, Y. Williams, K. Zishumba, V. Okpanachi, F. Maduakor, and D. Ashikwei, “Pipeline Surveillance and Leakage Detection System with IoT and UAV,” *Conf. Proc. - 3rd Bienn. Int. Conf. Transit. from Obs. to Knowl. to Intell.*, pp. 147–162, Nov. 2019.

[2] V. Odumuyiwa and U. Osisiogu, “A Systematic Review on Hidden Markov Models for Sentiment Analysis,” *Conf. Proc. - Int. Conf. Electron. Comput. Comput.*, 2019. (Accepted for Publication)

[3] U. Osisiogu, “A Review on Cyber-Physical Security of Smart Buildings and Infrastructure,” *Conf. Proc. - IEEE Int. Conf. Electron. Comput. Comput.*, 2019. (Accepted for Publication)

**WORKING/VOLUNTEER EXPERIENCE**

**eHealth4Everyone**

***Position: Data Scientist (November 2019 – Present)***

* Write software codes to query, manipulate, wrangle and analyse datasets
* Support the automation of data submission and retrieval from identified APIs, weblinks and databases.
* Built efficient robust pipelines
* Worked with the data analyst to discover insights in vast amounts of data
* Facilitated the decision-making process through insight obtained from data to ensure delivery of better products
* Applied data mining, statistical analysis and developed high-quality machine learning systems that were integrated into existing products.

**Data Science Nigeria**

***Position: Intern (April – June 2019)***

* Developed Python and Data Science and Machine Learning curriculum for pre-university students
* Worked on a project that uses Natural Language Processing to detect advanced fee fraud messages
* Worked on a project that predicts soil humidity using data collected from Internet of Things devices like temperature and humidity sensors.

***Position: City Ambassador for Abuja, Nigeria (November 2019 – Present)***

* Organise AI/ML Meetups at different locations in the City
* Create and Supervise AI clubs at Tertiary institutions
* Develop and Teach AI/ML DSN designed curriculum as its best suits the community
* Conduct pieces of training that will lead to the creation of new AI ambassadors.

**Chugon Nigeria Limited August 2015 – January 2018**

***Position: Network Administrator***

* Ensured optimum network operations of servers and client devices.
* Involved in training clients on the management of on-site network devices.
* Involved in the training and development of interns.

**AWARDS**

Total E & P Undergraduate Scholarship Award February 2012

Cisco Certified Network Associate (CCNA) Routing and December 2013

Switching.

African University of Science and Technology Scholarship Award January 2018

African Development Bank Scholarship Award April 2018

Society of Petroleum Engineering Student Technical

Symposium Innovation award March 2019

AUST Inspire Award for Innovation June 2019

**SKILLS**

**Language Skills:**

**English Proficiency**: Test of English as Foreign Language (TOEFL) iBT score: **107/120**.

**Computer/Technical Skills:**

Proficient in the use of Python (including Numpy, Pandas, Scikit-learn, TensorFlow, PyTorch, TensorFlow Lite framework), MATLAB, Java and C programming languages. Proficient in the use of Linux operating systems (including Raspbian OS) and packages.

**Personal Skills:** Excellent communication skills both in verbal and written, and identification and implementation of strategies to meet objectives and targets.

**PROFESSIONAL DEVELOPMENT AND EXPERIENCE**

* Paper Presentation at the 15th International Conference on Electronics, Computer, and Computation
* Data Science Nigeria – City Ambassador
* Poster Presentation at Data Science Nigeria Artificial Intelligence Bootcamp
* Teaching pre-university students basic concepts in machine learning
* Presented at a Society of Petroleum Engineers Student Technical Symposium Energy Challenge at Obafemi Awolowo University, Ile-Ife and secured third place with an opportunity to showcase ideas at a National Conference.
* Presented at the AUSTInspire program and won an award for most innovative idea
* Poster Presentation at AGIP Workshop and Exhibition for Universities
* Organised student conferences as an IEEE student chair.
* Student Member Society of Petroleum Engineers Nigeria Council