Lukman Enegi ISMAILA

DOCTORAL RESEARCHER IN MACHINE LEARNING
Polytech Angers, Laris Laborarory
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Education

Ph.D Computer Science - Signals, Images, Vision *(In-View)*
UNIVERSITY OF ANGERS (UA)

Angers, France
Sept 2020 - Aug 2023

- Thesis: Machine Learning Applications in Neurosurgical Procedure for Brain Tumor Removal
- Advisor: Professor David Rousseau

MSc. Computer Science
AFRICAN UNIVERSITY OF SCIENCE & TECHNOLOGY (AUST)

Abuja, Nigeria
July 2016 - Dec 2017

- Thesis: Facial Expression Recognition for Adaptive Learning Environment
- Ranked top 5% among graduating students
- Advisor: Professor Mohamed Hamada (University of Aizu, Japan)

MSc. Computer Science
NILE UNIVERSITY OF NIGERIA (NUN)

Abuja, Nigeria
Nov 2015 - July 2017

- Thesis: Medical Expert System for Differential Disease Diagnosis
- Ranked top 2% among graduating students
- Advisor: Professor Nwojo Agwu Nnanna

BSc. Computer Science
NILE UNIVERSITY OF NIGERIA (NUN)

Abuja, Nigeria
Sept 2011 - June 2015

- Thesis: Mobile Based Election Result Transmission and Collation System
- Ranked top 2% among graduating students
- Advisor: Professor Steve A. Adeshina

Experience

Doctoral Researcher | School of Engineering, Angers
LARIS LABORATORY, UNIVERSITY OF ANGERS

Polytech Angers, France
Sept 2020 - Aug 2023

- Conceptualize research ideas to address problems in neurosurgical planning for brain tumor removal using advance machine learning techniques in collaboration with researcher at the department of neurosurgery, Central University Hospital (CHU) Angers.
- Design machine learning models for automatic recognition of functional brain networks using spatial and temporal resting state functional magnetic resonance imaging (rs-fMRI) data from healthy control subjects and unhealthy patients.
- Design and implement machine learning models using graph representation leaning approach.

Mobile Application Engineer | ITC Systems Global Limited
FULL STACK APPLICATION DEVELOPER

[Remote]
Aug 2020

- Design mobile application for Point-of-Sale Terminal and Mobile devices
- Organize periodic maintenance and test on Implemented applications
- Monitor and resolve software issue on all devices in the hands of agent
- Collaborate with UI/UX team to implement ideas to satisfy customer demands

Lecturer - Computer Science | Alumni Coordinator
NILE UNIVERSITY OF NIGERIA (NUN)

NUN, Abuja
May 2017 - Aug 2020

- Teach theoretical and practical concepts of computer science for undergraduate level students.
- Engage in research activities with department professors
- Supervise final year students projects

Instructor | ICT Capacity Building
INTERNATIONAL CONSULTING EXPERTISE (ICE) | ICE EEIG

Brussels, Belgium
March 2019 - April 2019

- Design Curriculum for ICT Capacity Building
- Train Staff of the Ministry of Information & other agencies under the SUFEGOR programme

Software Programmer | ICT - Department
NILE UNIVERSITY OF NIGERIA (NUN) | ICT - DEPARTMENT

NUN, Abuja
Sept. 2015 - July 2016

- Design and maintenance of school website, software development

Database Analyst | Consultant *INEC, Nigeria*
Independent National Electoral Commission (INEC) | ICT - Department *Nov. 2015 - Date*
- Software Maintenance & Database Consultant

Volunteer Experience

Lead Machine Learning (ML) Engineer | Project Manager *Omdena, USA*
Projects *Nov 2020 - Present*
- ✰ Credit Scoring for Making Food Affordable to the Millions of Underserved in Africa (Sept, 2022) **(Role: Project Manager)**
- ✰ Violence Detection Between Children and Caregivers Using Computer Vision (April, 2022) **(Role: Lead ML Engineer)**
- ✰ Helping the Energy Industry Achieve Digital Transformation Through AI(Aug 2021) **(Role: Lead ML Engineer)**
- ✰ AI for Energy: Transitioning towards a sustainable Energy System in Nigeria(Aug 2021) **(Role: ML Engineer)**
- ✰ Improving Food Security and Crop Yield in Senegal (Feb 2021) **(Role: ML Engineer)**
- ✍ **Responsibilities & Goals**
- Design adaptive machine learning model for 5 level credit scoring algorithms for food subscription
- Annotation, detection, interaction filtering and violence detection between child-caregiver and elderly-caregiver
- Mobile Application development for crop disease detection using Machine Learning
- Tensorflow Lite Machine Learning Model
- Front-End Web Development
- Machine Learning Model to identify high/moderate to low populated areas without adequate electricity and to decides the most suitable for solar panel installation
- Automatic generation of Smart P&IDs from images/PDF

Computer Vision Researcher at CV4Africa *Remote*
Sept 2022 - Present
- Provide technical explanation to all members on state-of-the-art techniques in high impact journals and conferences
- Conduct review on computer vision research using pan-African dataset
- collaborate on teach research project in complex machine learning techniques

Omdena-Paris Chapter Lead *Remote*
Omdena Community *Aug 2022 - Present*
- Create AI project proposals from identified problem in the society
- Coordinate project activities and onboard participants
- Establish collaboration with companies and industries to collect dataset and raise impact potential

Technical Assistant *Angers, France*
English Library of Angers *June 2022 - Present*
- Design and maintenance of volunteer management system
- General library support and coordination.

Programming Instructor for Kids & Adults *Abuja, Nigeria*
Volunteer Experience *July, 2015 - Nov 2018*
- STEM Boot camp Instructor - WAAW Foundation, Edu-Teens Science Development Foundation, Codes2Schools
- Basic Programming Boot camp for Mobile and Web application development
- Instructor, curriculum and program designer for MIT App Inventor and Scratch
- Volunteer at Google CS-First programs which involves teaching young students how to code.
- Instructor of scratch programming language at various secondary schools in Abuja.
- Google CS4HS: Instructor of MIT-App inventor for secondary school teachers across abuja.

Web Developer *Remote*
United Nations (UN) Volunteers *Aug 2021 - Present*
- Responsive website development for humanitarian organization
- Website maintenance/evaluation and Upgrade for SEO softwares

Program Coordinator *Abuja, Nigeria*
IEEE Nigerian Sections *June 2016 - Sept 2020*
- Supervise data science projects
- Provide direction, resources and advice on technical issues from students

Professional Training & Certifications

Google Project Management
COURSERA PROFESSIONAL CERTIFICATE *December, 2022*
Verification Link
- Foundations of Project Management, Project Initiation: Starting a Successful Project, Project Planning: Putting It All Together, Project Execution: Running the Project, Agile Project Management, Capstone: Applying Project Management in the Real World.

Cloud DevOps Engineer Nanodegree
UDACITY NANODEGREE PROGRAM *August, 2022*
Verification Link
- Operationalize infrastructure at scale and deliver applications and services at high velocity.
- Design and deploy infrastructure as code, build and monitor CI/CD pipelines for different deployment strategies, and deploy scalable microservices using Kubernetes

Strategic Leadership and Management Specialization
STANFORD UNIVERSITY (ONLINE) COURSERA COURSE *Nov, 2020*
Certificate ID: 86LVSKU7L49Y
- Managing the Organization, Designing the Organization, Corporate Strategy, Business Strategy, Strategic Leadership and Management Capstone, Foundations of Everyday Leadership, Applications of Everyday Leadership.

Data Science Technologist
THEORETICAL & PRACTICAL TRAINING | MASTERY AWARD EXAM *April 2018*
IBM Skills Academy
- Intensive Theoritical and Practical sessions with IBM Big Insight
- Demonstrated advanced proficiency on topics such as Apache Hadoop, Ambari, Spark, Big SQL, HDFS, YARN, MapReduce, ZooKeeper, Knox, Sqoop, and HBase.

Machine Learning
COURSERA COURSE *Jan, 2019*
Stanford University (Online)
- Courses Includes: Linear Regression, Logistical Regression, Principal Component Analysis, Support Vector Machine.
- Build ML models with NumPy & scikit-learn, build & train supervised models for prediction & binary classification tasks (linear, logistic regression).

Teaching Experience

Angevine School of Engineering (ESAIP)
VISITING LECTURER *Oct 2021 - Present*
Angers, France
- Teaching mathematical real Analysis topics for first year engineering students
- **Topics:** Set theory, limits and continuity of functions, differentiation of functions, applications of the derivative, integration of functions, double integrals, triple integrals, line integrals and surface integrals.

Nile University of Nigeria
COMPUTER SCIENCE LECTURER *July 2017 - Oct 2020*
Abuja, Nigeria
- Teaching theoretical and practical courses in computer science department
- **Topics:** Algorithms and data structures, computer architecture, numerical analysis, computer databases, mobile & web application programming.

Honors & Awards

ACADEMIC/PROFESSIONAL

Oct 2022 - Oct 2023	**The Datasphere Initiative Fellowship**, Research on medical data policy for scientific purposes in Africa	*Datasphere Initiative Geneva, Switzerland.*
June 2020 - 2023	**Petroleum Technology Development Fund(PTDF) Scholarship**, Doctoral Study in France	*Angers, France*
2016	**African Development Bank (AfDB) Scholarship**, Masters Scholarship in Computer Science	*Abuja, Nigeria*
2015	**3rd Overall Best**, Graduating Students of Class 2015	*NUN, Abuja*
2015	**2nd Best**, Graduating Students of Computer Science	*NUN, Abuja*

EXTRACURRICULAR

2016, 2017 & 2018	**Award of Excellence**, Software for Student Representative Counsel Election	*Nile University*
2016	**Program Facilitator**, STEM Boot-camp program by WAAW Foundation	*WAAW Foundation*
2015	**2nd Place**, VC-Cup Football Tournament	*NUN, Abuja*
July 2018	**3rd Place**, NUN Alumni Reunion Marathon	*NUN, Abuja*

Selected Publications

INTERNATIONAL JOURNALS/CONFERENCE PUBLICATIONS

Lukman E. Ismaila, Pejman Rasti, Jean-Michel Lemee and David Rousseau: "Self-Supervised Learning for Functional Brain Networks Identification in fMRI from Healthy to Unhealthy Patients"
16th INTERNATIONAL CONFERENCE ON SIGNAL-IMAGE TECHNOLOGY & INTERNET-BASED SYSTEMS (SITIS)
• doi: 10.1109/SITIS57111.2022.00061

SITIS 2022 Conference

Oct. 2022

Lukman E. Ismaila, Pejman Rasti, Florian Bernard , Mathieu Labriffe, Philippe Menei, Aram Ter Minassian, David Rousseau, and Jean-Michel Lemée: "Transfer Learning from Healthy to Unhealthy Patients for the Automated Classification of Functional Brain Networks in fMRI"
JOURNAL
• doi: 10.3390/app12146925

MDPI Applied Sciences

July. 2022

Lukman E. Ismaila, Pejman Rasti, Jean-Michel Lemee and David Rousseau: "Deep Learning Pour La Classification Automatique de Réseaux Cérébraux Fonctionnels Par Irmf de Repos"
CONFERENCE PROCEEDING
• doi: https://doi.org/10.1016/j.neurad.2022.01.017

Journal of Neuroradiology

March. 2022

Falalu. I. Lawan, Lukman E. Ismaila, Steve A. Adeshina; Habib I. Muhammed; Lehel Csato: "Deep Learning Methods for Filter Extraction in Tomato fruits"
CONFERENCE
• doi: 10.1109/ICECCO48375.2019.9043283

IEEE Conference - 2019 15th (ICECCO)

Dec. 2019

Fauwzziyyah O. Umar, Lukman E. Ismaila and Ibrahim A. Umar: "The Prospect and Significance of Lifeline: An E-blood bank System"
CONFERENCE
• doi: 10.1109/ICECCO48375.2019.9043193

IEEE Conference - 2019 15th (ICECCO)

Dec. 2019

Lukman E. Ismaila, Mohamed Hamada and Steve A. Adeshina: "Adaptive Multimedia Learning Framework with Facial Recognition System"
CONFERENCE
• doi: 10.1109/ICECCO.2017.8333315

IEEE Conference - (ICECCO-2017)

Abuja, Dec 2017

Lukman E. Ismaila, Isa M. Ismail and Nwojo N. Agwu: "Relevance of User Data Completeness in Resolving Differential Diagnosis in Medical Expert System"
CONFERENCE
• doi: 10.1109/ICECCO.2018.8634683

IEEE Conference - (ICECCO-2018)

Kazakhstan, Nov. 2018

Nafisah Munir, Lukman E. Ismaila and Steve A. Adeshina: "Decentralized Wireless Communication Using WI-FI in Battlefield Combat Identification System Optimization"
CONFERENCE
• doi: 10.1109/ICECCO.2018.8634802

IEEE Conference - (ICECCO-2018)

Kazakhstan, Nov. 2018

Lukman E. Ismaila, Steve A. Adeshina and Adegboyega Ojo: "Local and Global Election Result collation & Transmission System
CONFERENCE
• doi: 10.1109/ICECCO.2017.8333318

IEEE Conference - (ICECCO-2017)

Abuja, Dec 2017

Program Committee

Dec. 2019	**International Conference on Electronics, Computer and Computation (ICECCO 2019))**, Research Proceeding Editor	*Abuja, Nigeria*
Aug. 2019	**IEEE PES-IAS Power Africa conference 2019)**, Editor, Webmaster and Volunteer in IEEE Smart Village Events	*Abuja, Nigeria*
Dec. 2017	**Nigerian Private University Games Association (NPUGA 2017)**, Head, Accreditation Team	*NUN*
Nov. 2017	**International Conference on Electronics, Computer and Computation (ICECCO 2017)**, Member, Local Organizing Committee, Proceeding Editor	*NUN*
Sept. 2017	**IEEE ASYPC 2017**, Young Professional Attendee, Member, Organizing Committee	*Baze University, Abuja*
2015 & 2017	**ICECCO Conference**, Proceeding Editor, Printing Certificates & Tags	*NUN, Abuja*

Technical Skills and Expertise

(Acquired expertise from academic, professional and industrial experience).

Programming

- C/C++, Python, Java, Kotlin, R, JavaScript, MySQL, Prolog and LaTeX.

Applications & Libraries

- MATLAB, ImageJ, MRIcroGL, TensorFlow, Scikit Learn, Keras, PyTorch, Anaconda, R-Studio, Spyder IDE, Deep Graph Library (DGL), PyTorch Geometric, Amazon Web Services (AWS), LabView, Hadoop, Spark, OpenStack, CircleCI, Ansible, Docker, Kubernetes, Streamlit, Android Studio and Postman.

Mathematics

- Strong engineering mathematics background, Foundation of industrial mathematics and advance calculus, numerical analysis, Differential equation, Probabilistic and statistical modeling, Number Theory and Geometry.

Machine Learning

- Medical dataset preprocessing, exploratory data analysis, Predictive modeling, Time Series Modeling, Statistical modeling problems, Supervised learning (Classification, Regression, dimensional reduction, structured prediction), Self-Supervised Learning, Unsupervised learning (Clustering-hierarchical clustering), (Anomaly Detection-Local Outlier factor), Incremental clustering of large database and Reinforcement Learning.

References

Prof. David Rousseau   *Université d'Angers*
HEAD, IMHORPHEN BIOIMAGING RESEARCH GROUP   *david.rousseau@univ-angers.fr*
- Doctoral research director

Dr. Pejman Rasti   *Angevine School of Engineering (ESAIP)*

ASSOCIATE PROFESSOR IN MACHINE LEARNING RESEARCH   *pejmanrasti@gmail.com*
- Doctoral research co-director

Prof. Mohamed Hamada   *University of Aizu, Japan*
SENIOR RESEARCHER, SOFTWARE ENGINEERING LAB   *mhamada2000@gmail.com*
- Visiting Professor at African University of Science & Technology
- Master thesis research advisor & lecturer