Victor AKINWANDE

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Education

Carnegie Mellon University - Africa **Rwanda**
Master of Science in Information Technology *August 2016–May 2018*

Thesis: Robot Learning from demonstration: An investigation into the use of Predictive Sequence Learning for Robot Manipulation

University of Ilorin **Nigeria**
Bachelor of Science in Computer Science *September 2011–June 2015*

Thesis: Automatic and real-time pothole detection and traffic monitoring system using smartphone technology

Work Experience

IBM Research | Africa **Kenya**
Research Engineer, AI Science *Jan 2019–Date*

Researching core AI algorithms and building AI tools to solve business problems. Applying anomalous pattern detection to neural network robustness. Applying ML and causal inference algorithms to healthcare for maternal and neonatal child health outcomes, and exploring dynamics of contraceptive discontinuation.

Oltranz **Rwanda**
IT Consultant *June 2018–December 2018*

Designed and built back-end systems as well as infrastructure to help meet the scale and operational efficiency required by the company's technology solutions and portfolio of clients which included the federal tax revenue authority. Developed and deployed a public facing Application Programming Interface (API) for the Rwandan Meteorological agency.

IBM Research | Africa **Kenya**
Software engineering Intern, Cognitive Healthcare *September 2017–December 2017*

Focused on improving natural language processing techniques specifically neural language models for English language as spoken in East and West Africa applied to conversational agents in the health domain.

Data Systems Ltd. **Rwanda**
IT Consultant *May 2017–September 2017*

Led the execution of a meal ordering application for Radisson Blu; an upscale, 290 sized international chain of full service hotels and resorts brand. Designed and developed a business to business platform to provide international market linkage for Agribusinesses in Africa.

N4Labs **Nigeria**
Lead mobile developer *September 2014–August 2016*

Led the team that developed mobile apps for top organizations in Africa including The Sun Newspaper, Education as a Vaccine – a globally recognized health NGO, and Funkythar; an online apparel marketplace.

○ **Visual Data initiative** **Nigeria**
Co-founder *June 2014–September 2015*

Winner of Social Entrepreneurs Initiative by Transparency International, 2014. Awarded a $5,000 grant to retell public data towards driving accountability in governance in Nigeria.

○ **Hotels Booking Ltd. (hotels.ng)** **Nigeria**
Software engineer *July 2014–September 2014*

Developed the barebones API, a third-party reservation application based on the API for Quickteller platform by Interswitch Ltd, and led the development of the company's Android application.

Fellowships, Awards and Honors

○ IBM Outstanding Technical Achievement Award, 2019 for contributions to Advancing Adversarial Robustness in AI Models.
○ IBM Research | Africa Technical Contributions Award, 2019
○ IBM Great Minds student, 2017.
○ Innovators Forward Fellow, Carnegie Mellon University
○ Winner of Social Entrepreneurs Initiative for West Africa by Transparency International, 2014

Technical skills

○ Software engineering: Java, NodeJS, Python, C/C++.
○ Database management: Hbase, SQL, Mongodb.
○ DevOps & cloud computing: Azure, AWS, GCP, Kubernetes, Terraform, Hadoop, Spark, Linux.
○ Machine learning: NLP, Adversarial Robustness, Pytorch, Tensorflow.
○ Engineering economics, renewable energy modeling, cognitive robotics.
○ Open source: IBM adversarial robustness toolbox.

Professional activities and Service

○ Organizing committee, Deeplearning Indaba 2019.
○ Co-organizer, TEDx Rugando, 2018. Kigali, Rwanda.
○ Organizer, Kigali AI Bootcamp.
○ Vice-president, Data Science club, CMU-Africa.
○ Project lead for NASA International Space Apps Challenge 2015, Ilorin.
○ Finalist GITEX Student Lab 2014 & 2015 Dubai
○ Delegate, UN Youth Consultation to the Annual High Level Dialogue on Democracy, Human Rights and Elections in Africa, Nairobi, 2014.
○ Community manager, Google Developers Group, University of Ilorin (2013 - 2015).

Publications & Pre-prints

Victor Akinwande. Security assessment of blockchain-as-a-service (baas) platforms. 2017.

Victor Akinwande, Kayode Adewole, Olayiwola Bello, and Abimbola Akintola. Automatic and real-time pothole detection and traffic monitoring system using smartphone technology. In *International Conference on Computer Science Research and Innovations (CoSRI 2015)*, 2015.

Victor Akinwande, Celia Cintas, Skyler Speakman, and Srihari Sridharan. Identifying audio adversarial examples via anomalous pattern detection. *arXiv preprint arXiv:2002.05463*, 2020.

Victor Akinwande and Sekou L Remy. Characterizing the hyper-parameter space of lstm language models for mixed context applications. *arXiv preprint arXiv:1712.03199*, 2017.

Olayiwola Bello, Victor Akinwande, Oluwatoyosi Jolayemi, and Ahmed Ibrahim. Open data portals in africa: an analysis of open government data initiatives. *African journal of library, archives & information science*, 26(2):97, 2016.

Olayiwola Bello, Oluwatoyosi Jolayemi, Victor Akinwande, and Ahmed Ibrahim. Open data portals in africa an empirical analysis of open government data initiatives.

Olayiwola W Bello, Victor A Akinwande, Oluwatoyosi A Jolayemi, and Ahmed O Ibrahim. Section six: Ict and anti-corruption.

Celia Cintas, William Ogallo, Aisha Walcott, Sekou L Remy, Victor Akinwande, and Samuel Osebe. Towards neural abstractive clinical trial text summarization with sequence to sequence models. In *2019 IEEE International Conference on Healthcare Informatics (ICHI)*, pages 1–3. IEEE, 2019.

Celia Cintas, Ramya Raghavendra, Victor Akinwande, Aisha Walcott-Bryant, Charity Wayua, and Komminist Weldemariam. Decision platform for pattern discovery and causal effect estimation in contraceptive discontinuation.

Celia Cintas, Skyler Speakman, Victor Akinwande, William Ogallo, Komminist Weldemariam, Srihari Sridharan, and Edward McFowland. Detecting adversarial attacks via subset scanning of autoencoder activations and reconstruction error.

Celia Cintas, Skyler Speakman, Victor Akinwande, Srihari Sridharan, William Ogallo, and Edward McFowland III. Anomalous pattern detection in activations and reconstruction error of autoencoders. 2019.

Joan Nkiriki and Victor Akinwande. Sustainability assessment of beccs (bioenergy with carbon capture & storage), 2017.

William Ogallo, Skyler Speakman, Victor Akinwande, Kush R Varshney, Aisha Walcott-Bryant, Charity Wayua, and Komminist Weldemariam. Inspection of blackbox models for evaluating vulnerability in maternal, newborn, and child health.

Skyler Speakman, Celia Cintas, Victor Akinwande, Srihari Sridharan, and Edward McFowland III. Deep mining: Detecting anomalous patterns in neural network activations with subset scanning. 2019.