Kenechi Franklin Dukor

Software Engineer

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Education

2012–2016 **University of Lagos – BS(Hons), Mechanical Engineering**.
GPA: 4.38/ 5.0 **[certificate]**

2017-2019 **Other Certifications**.

- Machine Learning, Coursera **[link]**
- AI for Medicine by deeplearning.ai, Coursera **[link]**
- Deep Learning Nanodegree, Udacity **[link]**
- Deep Reinforcement Learning Nanodegree, Udacity **[link]**
- Google Cloud Platform Fundamentals: Core Infrastructure, Coursera **[link]**

Work Experience

Sept. 2019 – Present **IT Project Manager**, Wapic Insurance Plc .

- Managed the requirement gathering, development, deployment and monitoring of applications built internally.
- Mapped out the claims process in preparation for a digital transformation, as well as developed a flow diagram that suggests improvements on the current process.
- Successfully deployed a Retail portal to enable purchases of insurance and initiation of claims online.
- Liaise with the development team on achievable goals, architecture, as-well-as timelines for projects.

Oct. 2018 – Present **Software Engineer**, Wapic Insurance Plc .

- Coordinated the design and implementation of various applications, including collaboration with project managers, client representative and development teams.
- Build applications using C#, ASP.NET, React and Python, that automate the insurance processes for retail and corporate customers, as-well-as internal processes in the company
- Provide mentoring services to junior developers as needed.

Jan. 2018 – June 2018 **Research Intern**, Herzer Research Group, University of Lagos .

- Developed mathematical models to solve the problem of predicting heat flow and behaviours on various surfaces. Some mathematical methods used were Differential Transformation Method, Garlekin's Method of Weighted Residual and Homotopy Perturbation
- Applied the Galerkin's Method of weighted residuals to solve problems of heat flow in surfaces such as micro-fins.

Jan. 2017 – May 2017 **Design Engineer**, San-Latunag Limited .

- Analysed and designed HVAC&R systems for Residential and Commercial building using AutoCAD and some other special tools for estimating cooling load.
- Supervised the installation of the HVAC units on site.
- Created E-Copies (MS Excel) of relevant resources required for quick estimation of cooling load for buildings.

Research Experience

Feb. 2016 – Nov. 2016 **Thermal Performance Analysis of Rough Micro-Fins with Variable Cross-Sections [Published]**.

- **Goal**: A study on enhanced heat transfer and thermal management of micro-fins with artificial surface roughness for different shapes (cylindrical, rectangular, hyperbolic and parabolic)
- **Method**: Using Galerkins's Method of Weighted Residuals the analytical solutions of the developed thermal models was used to carry out parametric studies and to establish the thermal performance enhancement of the rough fins over the existing smooth fins.
- **Outcome**: The fin efficiency ratio was greater than unity when the rough and smooth fins were subjected to the same operations with same geometrical, physical, thermal and material properties. Hence improved thermal management of electronic and thermal systems could be achieved using artificial rough surface fins.
- **Recognition**: Paper publication - M.G. Sobamowo, K.F. Dukor, G.A. Oguntala. (2018). *Galerkin Method of Weighted Residual to Study on Enhanced Heat Transfer in Cylindrical Micro-Fins Heat Sink Using Artificial Surface Roughness*, International Journal of Manufacturing and Material Engineering. **[paper]**

April. 2020 **Paper review: *Assigning a Grade: Accurate Measurement of Road Quality Using Satellite Imagery* by Gabriel Cadamuro,Aggrey Muhebwa and Jay Taneja**.

- **Goal**: To review selected papers from ML4D at NeurIPS and possibly make improvements on the methods applied by the author. (AI Saturdays Lagos Research Track)
- **[report]**

June. 2020 **Towards Affordable Agricultural Automation for Farmers in Nigeria**.

- **Goal**: This project will lead to the development of a simulated environment for a cable-suspended robot that enables farming automation. (AI Saturdays Lagos Research Track)
- **Method**: Unity ML will be used to build the environment and various deep reinforcement learning algorithms will be experimented while developing building the model
- **Outcome**: ongoing.

Leadership Experience

Feb. 2020 – Present **Application Development Lead**, Wapic Insurance IT Division .

- Coordinate the design and implementation of various applications, including collaboration with project managers, and client representative and application development teams.
- Liaised with the business owners on software to be built, their features and their respective timelines.

Jan. 2019 – Present **Organiser**, AI Saturdays Lagos .

- Identify and kick-start partnerships that align with the mission and vision of the community, and are beneficial to the students.
- Liaise with the lead instructors of the different learning track, on what curriculum to be taught.
- Ensure the availability of resources required for learning such as venue and internet.

Nov. 2015 – Dec. 2016 **President**, ASHRAE, University of Lagos .

American Society for Heating Refrigeration and Air-Conditioning Engineers

- Managed the students branch activities and reported duly to the National branch and Region-at-large.
- Conducted technical sessions for our members, organised events that invited experienced HVAC Engineers to our meetings.
- Successfully increased the membership of the branch by about 30% and won a $3000 ASHRAE scholarship for a student member.

Projects/Achievements

- **Software Development**.
  - Built a QR code attendance tracker app using google sheets as database. For low budget meetups, it keeps record of attendance with little effort. (soon to be open sourced)
  - Participated in the development and deployment of Wapic Retail portal *(for retail purchases)*, Corporate portal *(for corporate purchases)*, and Company website.
  - Developed a machine learning model that confirms images uploaded during purchase of motor insurance policy are cars.
  - Built a ChatBot to enable customer engagement on the company's website while human agents are offline.
  - Participated in the development and deployment of Wapic Apis as well as integration with partner Apis
  - URL to some projects: **[Wapic Coporate Portal]**, **[Wapic Retail App]**, **[Maza Api (ongoing)]**, **[Wapic Api]**, **[Treasure Capital Ng]**, **[AI Saturdays Lagos]**, **[Essence Library]**

- **Machine Learning (Artificial Intelligence)**.
  - Collated dataset of Nigerian currencies and implemented a Convolutional Neural Network model to classify Nigerian Currency using Fastai and obtained an average accuracy of 96%. **[link]**
  - Implemented a Multi-Agent Reinforcement Learning model to play the game of tennis on Unity ML-Agents Tennis Environment, with an average score of 30 after 97 episodes. **[github]**
  - Implemented a Convolutional Neural Network model to detect face emotion and obtained an average accuracy of 70%.
  - Achieved an outstanding Kaggle leader-board score in the Women in Data Science competition after implementing a Convolutional Neural network to predicts the presence of oil palm plantations in satellite imagery. **[link]**
  - Implemented a reinforcement learning agent in the Unity ML-Agents Reacher Environment. The double-jointed arm agent learnt to maintain position at the target location in an observation space with 33 variables corresponding to position, rotation, velocity and angular velocity. **[github]**

- **Engineering**.
  - Together with a team of students, we designed and constructed an electric car using locally sourced materials. **[video]**
  - Implemented a mathematical model that describes the thermal performance of different shape of micro-fins.**[publication]**

Volunteer Experience / Membership

Organising Committee.
- Lagos NeurIPS meetup (2019) **[link]**
- AI Saturday Lagos (Over 700 attendees) **[website]**

Mentorship.
- National Youth Service Corp (2018)

Teaching.
- Machine Learning at AI Saturdays Lagos, (Curriculum used: Andrew Ng's Machine Learning, Coursera)
- Machine Learning at AI Saturdays Lagos, (Curriculum used: Zico Kolter's Machine Learning, CMU)
- Data Science at AI Saturdays Lagos, (Curriculum used: Zico Kolter's datasciencecourse.org, CMU)

Memberships.
- Black in AI
- American Society for Heat, Refrigeration and Air-conditioning Engineers (ASHRAE)

Conferences and Invited Talks

July 2020 Robotics: Science and Systems 2020 (Conference).

May 2020 Invited Talk on Machine Learning at University of Lagos Mechanical Engineering Society **[slides]**.

Nov 2019 Invited Talk on Technology at AYPF, Anambra State **[slides]**.

October 2019 Invited Talk at Tensorflow Roadshow **[slides]**.

Skills

Frontend ASP.NET, VueJs(basic), HTML, CSS, Javascript

Backend Python, C#, Java

Tools Git, VS Code, Visual Studio, Basics(AWS, Azure, GCP)

Database PostgreSQL, MSSQL

Machine Learning PyTorch, ScikitLearn, Jupyter Lab

Planning Agile, SDLC

Tools Github, Bitbucket, Microsoft Visio, Notion, Trello