CURRICULUM VITAE

PROF. Jerry John Kponyo

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# Education

**PhD** University of Electronic Science and Technology of China, Information and

Communication Technology June 2015

Dissertation: “Applying Ant Colony Optimization to VANETs”

Supervisor: Prof. Yujun Kuang

**MSc** Kwame Nkrumah University of Science and Technology, Ghana, Electrical

Engineering July 2006

Thesis: “Telemedicine in Rural Communities in Ghana”

Advisor: Rev Dr J.K. Oppong

**BSc** Kwame Nkrumah University of Science and Technology, Ghana, Electrical

Engineering July 2002

# Research Experience

1. Currently leading the Emerging Networks and Technologies Research Laboratory which is focused on AI, IoT, Emerging Networks and Intelligent Systems.
2. Currently working on using sentiment analysis to predict Election Outcomes
3. Leading research on improving security in IoT devices.
4. Developed a NetLogo based algorithm to predict the extent of epidemic spread in case of an outbreak, currently working on applying it to Covid-19.
5. Developed an intelligent wheelchair for use in hospitals.
6. Developed an intelligent basket for use in shopping malls.
7. Led a project on smart irrigation for rural communities in Ghana.
8. Developed a Minimum Spanning Tree (MST) Clustering Algorithm for application in VANETs.
9. Developed a circularly polarized slot antenna for multiband applications.
10. Worked on the possibility of using the orbital angular momentum of the EM wave for information transmission.
11. **Emerging Networks and Technologies Research Laboratory** (2018-Date), Leading research in AI, IoT, Emerging Wireless Networks and Intelligent Systems

**Role: Research Laboratory Director**

* The Lab has four PhD students, three MPhil candidates and fifteen undergraduate students.
* The Lab is also involved in collaborative projects with the Energy Center, KNUST and the College of Engineering Innovation Center.
* The Lab collectively has published over 40 articles in refereed Journals and Conferences.

1. **KNUST Engineering Education Project** (2019 to Date), A World Bank Africa Center of Excellence Project, KNUST

**Role: Deputy Project Lead**

* Leading an Africa Center of Excellence Development Impact Project in the College of Engineering.
* Managing a 5.5-Million-dollar project aimed at improving postgraduate education and research in the College of Engineering.

1. **Responsible AI Network Africa** (2019-Date), Collaborative Initiative with TUM, Germany

**Role: Co-Founder**

* Building a Network of AI Professionals in academia and industry committed to the responsible use of AI.
* Making presentations at workshops and conferences on the responsible use of AI.
* Working with other organizations on introducing Ethics in AI in the Curriculum in African Universities.

1. **College of Engineering, KNUST Innovation Center (**2016-Date), Leading student innovation and prototype development in the College of Engineering

**Role: Center Leader**

* Successfully organized training workshops on product innovation for students.
* Collaborated with students from Ulsan National Institute of Technology, South Korea to develop three working prototypes.
* Collaborated with the National Robotics Association of Ghana to organize a robotics workshop for Senior High Schools in the Country.
* Ten working prototypes developed so far.

1. **African Research Academy for Women /KNUST Chapter (**2015 to Date), Mentoring young women researchers on various projects and product development.

**Role: Mentor**

* Mentored 10 interns so far to work on various research projects.

# Teaching Experience

**Kwame Nkrumah University of Science and Technology**, Kumasi

February 2008 to Present

**Associate Professor**, Department of Telecommunication Engineering

* Refer to Table 1 below for some courses

Table 1: Summary of Courses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Kwame Nkrumah University of Science and Technology** | | | | |
| **Rank** | **Course Code** | **Course Description** | **Total number of students** | **Academic Year** |
| **Associate Professor** | **FIRST SEMESTER** | | | 2019/2020 |
| TE 561 | Digital Signal Processing | 15 |
| TE 461 | Computer Applications and Project Design | 56 |
| **SECOND SEMESTER** | | |
| TE 386 | Digital Communication Systems | 250 |
| EE472 | Digital Signal Processing | 60 |
| TE 574 | Wireless Communication Networks | 15 |

**ESIGELEC**, FRANCE (January 2016 - December 2019)

**Visiting Lecturer**, Telecommunication Department

* Lectured Business Intelligence in the MIS Postgraduate programme

# other work Experience

1. **Head of Department** (2017-2018), Department of Electrical and Electronic Engineering, KNUST, Kumasi

* Provided leadership for teaching and research in the Department.

1. **Dean of Faculty** (2017-2018), Faculty of Electrical and Computer Engineering, KNUST, Kumasi.

* Provided leadership for teaching and research in the Faculty.

1. **Head** (2020-Present), Quality Assurance and Planning Unit, Vice-Chancellor’s Office, KNUST

* Ensuring the University conforms to Quality standards.

# Professional development Training

1. **Microsoft Project**

KOENIN, Dubai, April 2019

Description: Went through training in the use of Microsoft Project.

1. **Project Management**

KOENIN, Dubai, April 2019

Description: Went through training on Project Management.

1. **Project Management Essentials**

MASTRICH School of Management, Holland, 2017

Description: Went through training on Project Management.

# Professional Affiliations

Ghana Institution of Engineers, 2016-Present

Member.

Institute of Electrical and Electronic Engineers, 2012-Present

Member.

# Languages

**English**: Native Language, Intermediate Listener, Novice Speaker, Advanced Reading and Writing

# other skills and competences

* Good Leader
* Results oriented
* Public Speaker
* Programme Facilitator

# Professional Service

**Symposium Co-Organizer**

European Modelling Symposium, Manchester, 2017

**Peer-Reviewed Articles for**:

* COMPEL
* International Journal of Simulation Science and Technology

# Community Service

**African Research Academy for Women** (2015-Present)

Mentor/Supervising research for interns, KNUST Chapter

**Marconi Society, USA (**2018-Present)

KNUST Coordinator/Supervising innovative projects in Telecommunications

# References

1. **Prof. (Mrs) Rita Akosua Dickson**

Vice-Chancellor, KNUST

Phone: +233204620000,

Email: ritadickson2000@yahoo.co.uk

Relationship: I report directly to her

1. **Prof. Mark Adom-Asamoah**,

Provost, College of Engineering, KNUST

Phone: +233208968363

Email: markadomasamoah@gmail.com

Relationship: I report to him as the Provost of my College