Joseph Kamto

Curriculum Vitae

Education

2010 - 2014 **Doctor of Philosophy**, *Prairie View A&M University*, Texas, USA.
Electrical and Computer Engineering,

2006 - 2008 **Masters of Science**, *Prairie View A&M University*, Texas, USA.
Electrical and Computer Engineering,

1985 - 1991 **Bachelor of Science**, *University of Yaounde*, Cameroon.
Electromechanical Engineering,

Teaching Experience

Teaching

Spring 2015 **Adjunct Professor**, The University of Texas at Tyler (HEC), Houston.
Summer 2016 Department of Electrical Engineering
- Communication Theory
- Digital Systems
- Linear Circuits Analysis II

Spring 2015 **Adjunct Professor**, Houston Community College, Houston.
Summer 2016 Department of Engineering
- Introduction to Engineering,
- Engineering Graphics
- Engineering Dynamics

Fall 2010 **Teaching Assistant**, Prairie View A&M University, Texas USA.
Summer 2014 Department of Electrical and Computer Engineering
- Laboratory projects: Spring and Fall 2010, 2011, 2012, 2013, 2014,
- Substituted for missing professor and lectured to undergraduate students in classes such as Introduction to Communication Network Security, Communication Theory and Introduction to Wireless Communication.
- Research Topic: Defending Smart Grid against Cyber Attack

Summer 2006 **Teaching Assistant**, Prairie View A&M University, Texas USA.
Summer 2008 Department of Electrical and Computer Engineering
- Graded tests and assignments and supervise students in laboratory projects, provide instructions on use of software including Matlab, Simulink
- Research Topic: Wireless Mesh Networks Routing Security (WMN)

Research Experience

Research

Fall 2010 **Research Assistant**, Prairie View A&M University, Texas USA.
Summer 2014 Department of Electrical and Computer Engineering
Research Topic: Wireless Mesh Networks Routing Security (WMN): Design of an anonymous secure routing protocol to provide the confidentiality, security and integrity of the communication at the physical layer on one or multiple hop in a wireless mesh network, use of Matlab as a simulation tool to design an algorithm to evaluate the route establishment time as a result of the cryptographic processing delay, anonymous analysis, security analysis, message integrity and confidentiality analysis with satisfactory results,

Summer 2006 **Research Assistant**, Prairie View A&M University, Texas USA.
Summer 2008 Department of Electrical and Computer Engineering
Research Topic: Defending Smart Grid against Cyber Attack Provide end-to-end confidential power demand aggregation in near real time for power production/demand balance and end-user accountability for Advance Metering Infrastructure (AMI) with consideration on network resiliency against cyber attack and end-user power demand privacy to promote the trustworthiness of the smart grid. A lightweight elliptic curve cryptographic scheme is proposed to protect data and legitimate smart appliances within the Home Area Network (HAN) while homomorphic technique is used to secure the power demand aggregation within the mesh network configuration of smart meter in the Neighborhood Area Network (NAN). Proposition of an augmented tree based network topology of smart meters to enforce the failure resiliency of AMI and promote the availability requirement of smart grid (critical infrastructure). Use OPNET Modeler to simulate the security requirements in the Home Area Network.

Academic Projects

Fall 2010 **Projects**.
Summer 2014
- Hierarchical Software-Defined Radio Controlled Wireless Sensor Network Using USRP2/GNUradio And XBOW Motes
- Cognitive Radio Technology: Matlab-Simulink-USRP, QPSK Modulation Simulation
- Radio Frequency Signal Analysis
- Data Acquisition: NI-LabVIEW Computer-based Measurement and Control Technique for Radiation Detection.
- NI-Robotics
- Power Flow Analysis

Academic Skills

Fall 2010 **Coursework**.
Summer 2014 Power System Analysis, Power System Relay Protective, Power System Stability, Power Electronic, High Voltage Direct Current, Advance Signal Processing, Signal Detection Estimation, Telecommunication Network Security, Smart Grid Communication Security Design, Information Network, Stochastic Processes, Wavelets.

Fall 2010 **Software/Tools**.
Summer 2014 PowerWorld, ETAP, MatLab-Simulink, Opnet Modeler, National Instrument-LabVIEW, Microsoft Office, C++, Python, Radio frequency Analyzer (Agilent), NI-PXI Vector Signal Generator/Analyzer, USRP (Universal Software Radio Peripheral).

Work Experience

June 2013 – August 2013 **Internship Engineer Project for DTRA**, Los Alamos National Laboratory, Los Alamos, New Mexico.

Contribution to the development of the Compact Advanced Readout Electronics for Elpasolites (CAREE), a handheld instrumentation for dual gamma spectroscopy and thermal neutron detection using scintillation materials.

- Work with the software and electrical engineers in the group to understand the command and response transmission protocols, the command and data packet format suitable for the embedded driver and the internal architecture of the handheld device registers.
- Develop user software to interface with the hardware and then accept, process, and analyze measured data. The software is a real-time LabVIEW-based graphical user interface on the windows computer capable of assembling and sending command packets to the device, receiving streaming from the embedded software through USB port and over TCP/IP via Ethernet link, displaying the data and archiving the raw binary data.
- The front panel allows the update of common calibration and setup parameters. It contains numerous real-time display including list mode histogram, gamma spectrum and neutron spectrum. Rates for each of the active spectra are also displayed as well as high voltage, ASIC temperature, and detector temperature.
- Involve in research into follow-on options to the electronics, wireless transmission feature.

June 2008 – January 2010 **Electrical/Instrumentation Engineer**, Technip USA, Houston, Texas.

Contribution to the development of the Compact Advanced Readout Electronics for Elpasolites (CAREE), a hand-held instrumentation for dual gamma spectroscopy and thermal neutron detection using scintillation materials.

- Specification on fire protection and safety equipments NFPA 2001, NFPA 10, NFPA 12.
- Drawing design on fire and gas detector instrumentations with AutoCAD and NFPA 72.
- Drawing design on safety equipments and egress location plan (AutoCAD and NFPA 101).
- Specification and drawing design on safety signs using INTOOLS, NFPA 101.
- Hydraulic calculation using PIPENET software and API 2030.
- Cause and effect chart for fire and gas on process platforms, E&I building using MS Excel
- Request for Quotation on fire protection, safety equipments and deluge equipments.
- Technical Bid Tabulation for fire protection and safety equipment.
- Data sheets for fire protection, safety equipment and deluge equipments using INTOOLS.
- Hazardous Location Classifications (area classification).

Awards

2010 - 2014 HBGI Fellowship recipient

2013 Outstanding PhD Student, College of Electrical, PVAMU

Certification

2014 Certified LabVIEW Associate Developer (CLAD)

Affiliation

Institute of Electrical and Electronic Engineers (IEEE), Student Member,

National Association of Black Engineers (NSBE), Student Member

Society of Fire Protection Engineer

Languages

French **Mothertongue**

English **Fluent**

Citizenship

United States citizen

Publications

1 J. Kamto, "Secure Anonymous Routing in Wireless Mesh Networks", Master's Degree Thesis, Prairie View A&M University, Fall 2008.

2 X. Li, L. Qian, J. Kamto, "Secure Anonymous Routing in Wireless Mesh Networks", International Conference on E-Business and Information System Security, 2009.

3 J. Kamto, L. Qian, J. Fuller, J. Attia, "Light-Weight Key Distribution and Management for Advanced Metering Infrastructure", IEEE GLOBECOM, 2011.

4 J. Kamto, L. Qian, J. Fuller, Y. Qian, "Key Distribution and Management for Power Aggregation and Accountability in Advanced Metering Infrastructure", IEEE SmartGridComm, 2012.

5 J. Kamto, L. Qian, Wei Li, Zhu Han, "Biconnected Tree for Robust Data Collection in Advanced Metering Infrastructure", WCNC, 2015.

6 B. Budden., Dan, J. Kamto, "Handheld Readout Electronics to Fully Exploit the Particle Discrimination Capabilities of Elpasolite Scintillators", Nuclear Instruments and Methods in Physics Research A, Los Alamos National Laboratory, May 14, 2015.

7 J. Kamto, L. Qian, Wei Li, Zhu Han, "λ-Augmented Tree for Robust Data Collection in Advanced Metering Infrastructure", Hindawi Publishing Corporation, Smart Grid: ICT Control for Distributed Energy Resources (SGRID).

8 J. Kamto, L. Qian, J. Fuller, J. Attia, Wei Li "Light-Weight Key Distribution and Management in Home Area Network with OPNET Assessment", (to be submitted for journal publication).

9 J. Kamto, "Secure and Robust Data Collection in Smart Grid", PhD Dissertation, Prairie View A&M University, Spring 2014.