Amoako-Frimpong Samuel Yaw

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Education

Marquette University September 2016 - May 2018

MS. Electrical and Computer Engineering **Options** – Mod. Control Theory, Bayesian Signal Processing, Machine Learning

Kwame Nkrumah University of Science and Technology October 2011 - May 2015

BSc. Aerospace Engineering **Options** – Automatic Control, CAD/CAM, Maintenance Eng., Turbomachinery

Skills

Software Development: Python, C, C++, MATLAB, Visual Basic, LabVIEW

Electronics: Circuit and PCB design, Embedded Systems (PIC, AVR, ARM)

CAD/CAM: SolidWorks, Solid Edge, ANSYS, AutoCAD, Unigraphics NX, CNC Machines.

Others: Robotics, OpenCV, ROS, Gazebo, TensorFlow, Linux, Unity Game Development, Virtual & Augmented Reality development, Remote sensing, QGIS, Adobe Creative Suite.

Work & Volunteer Experience

Research and Teaching Assistant September 2016 – Present

Computer Vision and Sensing Systems Lab (COVISS) Marquette University

- Currently working on the development of stochastic search algorithms for improving the dynamic performance of mobile manipulators with MATLAB, ROS, and Python.
- Served as a teaching assistant for the Senior Design Project and Circuit Lab classes.

Research and Teaching Assistant September 2015 – August 2016

Earth Observation Research and Innovation Centre University of Energy and Natural Resources

- Assisted in the setup of a ground station for Direct Broadcast Earth Observation Satellites and handled the system administration of the processing and storage servers for the acquired datasets.
- Wrote scripts in python and VBA, for the formatting of large datasets, automation of data processing and archival tasks; robust to incorrect metadata, network dropouts and power outages.
- Assisted in the setup of software packages (IMAPP, IPOPP, WRF, ROMS) for the earth observation data processing, weather forecasting and ocean modelling.
- Assisted in the field validation and GIS visualization of thermal anomalies detected in VIIRS and MODIS imagery and performed land cover classification using Neural Networks in ENVI.
- Designed an Unmanned Aerial Vehicle (UAV) for remote sensing and imaging.

Software Development Intern Premium Collateral Management Ltd July 2016 – August 2016

- Ported multiple Excel sheets used in the management of petroleum stocks into standalone software. The Visual Basic application iteratively approximated the values of ASTM tables, to improve productivity in stock management.

Volunteer Engineer Agbogbloshie Makerspace Platform July 2014 – August 2016

- Built a UAV using E-waste for mapping the distribution of activities and airborne pollutants at the Agbogloshie E-Waste Dump site

Embedded Systems Tutor MISE Summer Camp & Project ISWEST July 2012 – August 2016

- Taught embedded systems to High School Students; Students built projects like Vision based coin counters, mobile robots, IoT modules and solar trackers using Python, C++ and EV3-G on the Raspberry pi, Arduino and EV3.

Computer Vision Tutor Marquette Engineering Leadership Academy June 2017

- Introduced High School Students to computer vision using OpenCV and python on the raspberry pi.

Volunteer Tutor Ghana Robotics Academy Foundation July 2012 – August 2016

- Taught Junior High and Senior High school students, around Ghana, robotics with the LEGO Mindstorms NXT and EV3, to augment science education and for participation in the RISE competition.

Projects

Qbay – An Augmented Reality Educational app, 2015

TECH-HAB-001/002 - High Altitude Balloon, 2014/2015

P-[Space] – A Parking lot monitoring system using Computer Vision, 2014

Heavy Lift Quadcopter – Senior Design Project - A Transport and Mapping UAV, 2015

TopBird – A Gamified app for Entrepreneurship education, 2015

IEEE-RCI - A Robot Control Interface for Teaching and a Sonar mapping robot, 2015

Leadership Experience

Vice President – Association of Aerospace Engineering Students (AAES) [2013-14]
Creativity Group – KNUST [2013-14]

Ass. Projects and Innovation Head – Institute of Electrical and Electronic Engineers (IEEE) [2013-15]

Public Relations Officer – Association of Aerospace Engineering Students (AAES) [2012-13]
Society of Automotive Engineers (SAE-KNUST) [2012-13]

Project Lead – Senior design project & High Altitude Balloon, KNUST

Microsoft Student Partner – Microsoft-Ghana, KNUST [2013-15]

Awards

International Junior Science Olympiad (Bronze); **Ghana Robotics Academy Foundation** (GRAF) Medal; **Ghana Institute of Engineers** (GhIE) Students Calabash(3rd place); **Millennium Youth Camp** Award; **Ghana Engineering Students Association** (GESA) Makers Fair 1.0 (1st place); **OdadeƐ** Special Award; **Ministry of Environment., Science and Tech.** (Ghana) Award; **Accra Science Hack day** (2nd); **Behance** Medal of Appreciation; **DSTV-EUTELSAT** Star Award (2nd); **Gesellschaft für Internationale Zusammenarbeit** (GIZ) Gamification Hackathon (Finalist);

Abstracts & Conference Presentations

Amoako-Frimpong S., Medeiros H., Marvel J., Bostelman R., Stochastic Search Methods for Mobile Manipulator Calibration. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),* 2017

Amoako-Frimpong S., Potential of Unmanned Aerial Vehicles in the Development of the SADA Region. *Ghana Institute of Engineers (GhIE) Annual Conference,* 2015

Memberships

Institute of Electrical and Electronic Engineers (IEEE), National Society of Black Engineers (NSBE), Society of Automotive Engineers (SAE) - KNUST, Association of Aerospace Engineering Students (AAES) - Ghana