NATHAN ANKOMAH-MENSAH

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EDUCATION

Purdue University — West Lafayette, Indiana — August 2019 - Present
Master of Science in Electrical & Computer Engineering (Class of 2021) — GPA: 3.37
GEM Fellow
Member of Eta Kappa Nu (HKN) — B Chapter

University of Rhode Island — Kingston, Rhode Island — August 2014 - May 2019
Bachelor of Science in Computer Engineering — GPA: 3.17
Bachelor of Science in Electrical Engineering
Minors: Mathematics, Computer Science
LSAMP Scholar
Member of Theta Tau (ΘT) — ΣΓ Chapter

University of Ghana, Legon — Accra, Ghana — May 2016 - August 2016
University Studies Abroad Consortium (USAC) — GPA: 3.73
Gilman Scholar

TECHNICAL PROFICIENCIES

Research Experience/Interest: Internet of Things; Reinforcement Learning
Engineering Software/Devices/Tools: EAGLE; Git; JIRA; Trello; Multisim; Arduino; Intel Edison; Raspberry Pi; BLE Nano; FPGA; ESP32; Multimeter; Oscilloscope; Power Supply; Signal Generator; Soldering
Data Science/Machine Learning Tools: Pandas; Numpy; Tensorflow Keras; PyTorch; Matplotlib
Programming Languages: Python; MATLAB; SPICE; C++; C; VHDL; Bash

EXPERIENCE

The MITRE Corporation — Remote | McLean, VA — *June 2019 - Present*
Air Force Engineering Support, *Electrical & Computer Engineering Intern* — *May 2020 - Present*

- Implementing Machine Learning and Reinforcement Learning techniques to train bots to take optimal actions in various scenarios.

Cyber-Physical & Mobile Technology, *Electrical & Computer Engineering Intern* — *July 2019 - May 2020*

- Utilized Machine Learning and Data Science techniques to decode over 525 CSV files (30 million data points per CSV file).
- Used Kalman Filters, LSTM Neural Networks, and SVM to identify anomalies within dataset

High-Performance Computing, *Electrical & Computer Engineering Intern* — *June 2019 - August 2019*

- Created and managed a testbed to explore deployment of a new scheduler and resource mangers, Slurm, for all HPC systems at MITRE.
- Developed initial documentation for installation processes to be leverage by HPC systems admins for future use.

Purdue University — Remote | West Lafayette, IN — *August 2020 - Present*
ECE 36200: Microprocessor, *Teaching Assistant* — *August 2020 - Present*

- Assisted 300+ students remotely with their circuits, Assembly code, and Embedded C code.
- In charged of grading 80+ students labs.

Zebra Technologies — Lincoln, RI — *June 2018 - September 2018*
Custom Applications Group, *Software Engineering Intern*

- Designed, coded, debugged, and tested software, software improvements, and software modifications to improve Zebra Technologies' internal ecosystem.
- Tested designs and code under specified and/or reasonable conditions for various sponsors.

University of Rhode Island College of Engineering — Kingston, RI — *March 2017 – May 2019*
Wearable Biosensing Lab, *Lab Research Assistant (sponsored by LSAMP)*

- Researched with undergraduate and graduate assistants for Professor Mankodiya (Wearable Body Sensor and Internet of Things Expert).

- Worked with Internet of Things (IoT) devices and various programming languages.

General Dynamics Electric Boat – Groton, CT *May 2017 - August 2017*
Information Technology, *Student Technical Assistant (Security Clearance: Secret)*

- Provided and supported computer resources for Electric Boat by utilizing an in-house database.
- Practiced IT Security and Compliance to ensure the security of Electric Boat.
- Oversaw Resource Management and Coordination to improve company resource usage.

University of Rhode Island — Kingston, RI *September 2014 - March 2017*
College of the Environment and Life Sciences, *IT Assistant* *August 2016 - March 2017*

- Setup and troubleshoot technology for the College of the Environment and Life Sciences staff and faculty.
- Answer various technology-related queries.

Information Technology Service, *Help Desk Senior Consultant* *October 2015 - March 2017*

- Install, modify, and repair computer hardware and software for URI students.
- Respond to queries and concerns in-person or over the phone.

Mainfare Dining Hall, *Dishwasher* *September 2014 - May 2015*

- Cleaned dishes and large pots, and dining hall at end of shift.
- Carried heavy-loads of items and stacked plates and cups accordingly.

Ama's Variety – Pawtucket, RI *June 2011 - August 2011*
Store Clerk

- Assembled and organized displays on a daily basis.
- Issued receipts, refunds, credits or change due to customers.
- Greeted customers as they entered the store, assisted politely and efficiently to find various items in the store.

PROJECTS

Computer Network Systems: Software-Defined Network *January 2020 - February 2020*
Designed a Software-Defined Network (SDN) using Python and threads. The SDN featured various clients and a server that ran route computations and kept track of network topology as clients and/or links failed.

Computer Organization: Web Controlled Dog Feeder *March 2018 - May 2018*
Collaborated with a fellow Computer Engineer student to create Web Controlled Dog Feeder using a FPGA, Arduino, Force Sensitive Resistor, Continuous Rotation Servo, 3D printing, and lighttpd webserver.

Capstone Design: Smart PDU (sponsored by Acumentrics) *October 2017 - May 2018*
Designed a Smart Power Distribution Unit with a team of engineers involving Raspberry Pi, Power Electronics, and LAMP Web Server.

NSF: Internet of Wearable E-Textiles for Telemedicine *September 2017 - May 2019*
Collaborated with a team of engineers and textile designers to develop a family of Smart Wearables utilizing IoT and embedded systems to track data from Parkinson patients, while transmitting data for monitoring.

Wearable Internet of Things: UV Glasses *September 2017 - December 2017*
Led a small team of engineers to construct a product with the functionality to receive UV light and transmit data to a user's smartphone using UV sensors, Arduino Uno, Bluetooth Low Energy, and Android Studio.

Internet of Things Research: Communication Organization *March 2017 - May 2017*
Developed a method for tracking and distributing information using an Intel Edison and Arduino 101. The final product was able to send pseudo values through the Edison to a Computer using Node.js.

Electronic Design Automation: TRON Project *March 2017 - May 2017*
Utilized Quartus to design a TRON Project on a DE1-SoC-MTL board, with four types of AIs that have different "personalities" using VHDL along with a full flow graph and full state diagram of the system.

LEADERSHIP EXPERIENCE

Purdue Black Graduate Student Association (BGSA) – B Chapter *August 2020 - Present*
Academic & Professional Developmental Chair

- Planned events to benefit BGSA membership academically and professionally

Eta Kappa Nu (HKN) , Honor Society of IEEE – B Chapter *March 2020 - Present*
Volunteer Committee Member

- Assisted with planning volunteer events for Eta Kappa Nu membership.

URI International Engineering Program House *September 2017 - May 2018*
Council Member

- Acted as Residential Advisor between two buildings on campus.
- Resolved minor to major conflicts between residents from various nations.

URI Computer Engineering Student Advisory Board *Spring 2016, 2017, 2018*
Member

- Gave outlook and suggestions regarding URI's Computer Engineering Program with other selected Advisory Board members.

National Society of Black Engineers (NSBE) *September 2014 - Present*
Purdue Chapter, *Member* *May 2020 - Present*

- Attending bi-weekly meeting and events

URI Chapter, *Senator* *May 2017 - May 2018*

- Made informed decisions on behalf of the URI NSBE Chapter during national meetings and conferences.

URI Chapter, *Vice-President* *May 2016 - May 2017*

- Managed 11 Executive-Board members and act as President when needed.

URI Chapter, *Secretary* *May 2015 - May 2016*

- Kept records and reports of 22 general and 24 executive board meeting

Theta Tau (ΘT), A Professional Engineering Fraternity – ΣΓ Chapter *February 2016 - May 2019*
Web Committee Chair *August 2016 - April 2018*

- Help design Sigma Gamma Chapter's Website visited by over 5,000 people per year.
- Collaborate with three other web committee members to finish programming assignments.

College Crusade of Rhode Island *September 2015 - March 2017*
Alumni *June 2014 - Present*

- Assist developmental program that provides mentorship for students going to college.
- Provide mentorship to younger members of the organization to improve leadership skills.

VOLUNTEER EXPERIENCE & STEM OUTREACH

NSBE46 Virtual Career Fair, Purdue Graduate Program Recruiter	*August 2020*
MATHCOUNTS, Exam Proctor	*February 2020*
Dranesville Elementary School Out the Box Day, Volunteer	*July 2019*
RI Robot Block Party, Exhibitor	*April 2019*
All Saints Academy Outreach Paper Circuit Event, Presenter	*March 2019*
ELECOMP Capstone Design Program, Undergraduate Engineering Consultant	*January 2019 - May 2019*
Academic & Textile Industry Networking Fair, Exhibitor	*February 2019*
IEEE Internet of Things Journal, Peer Reviewer	*December 2018 - Present*
Intro to Electrical Engineering (ELE 101), Undergraduate Teacher Assistant	*January 2018 - May 2018*
Computer Science 4 Rhode Island (CS4RI), Presenter	*December 2017*
RIse with STEAM at Quonset Air National Guard Base, Exhibitor	*May 2017*
Habitat for Humanity Flagler Beach, Volunteer	*March 2017*
SMILE (Science & Math Investigative Learning Experiences), Volunteer	*April 2016*
URI College of Engineering, Volunteer	*August 2015 - April 2018*

HONORS & AWARDS

Eta Kappa Nu - Beta Chapter Outstanding Pledge Award	*April 2020*
2019 Summer MITRE Hackaton, 3rd Place	*July 2019*
MITRE's CORTeX CTF 2019, 1st Place	*July 2019*
GEM Fellowship	*May 2019*
Dean's List	*Fall 2017, Spring 2018, Spring 2019*
Saint Elmo Brady Award for Outstanding Achievement in Science	*April 2019*
NSBE Fulfilling the Legacy Scholar	*March 2019*
URI AR/VR Immerse-A-Thon 2019, 1st Place	*March 2019*
LSAMP Scholarship	*March 2017*
NSBE Certificate of Appreciation (New England Zone)	*October 2016*
NSBE Outstanding Member of the Year (URI Chapter)	*April 2016*
Gilman Scholarship	*January 2016*
College Crusade Scholarship	*June 2014*

CERTIFICATION

Passed Fundamentals of Engineering Exam (FE)	*January 9th, 2020*