

# NATHAN ANKOMAH-MENSAH

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## EDUCATION

<b>Purdue University</b> — West Lafayette, Indiana Master of Science in Electrical & Computer Engineering (Class of 2021) GEM Fellow Member of Eta Kappa Nu (HKN) — B Chapter	August 2019 - Present GPA: 3.37
University of Rhode Island — Kingston, Rhode Island Bachelor of Science in Computer Engineering Bachelor of Science in Electrical Engineering Minors: Mathematics, Computer Science LSAMP Scholar Member of Theta Tau (ΘΤ) — ΣΓ Chapter	August 2014 - May 2019 GPA: 3.17
University of Ghana, Legon — Accra, Ghana University Studies Abroad Consortium (USAC) Gilman Scholar	May 2016 - August 2016 GPA: 3.73

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## 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;

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## EXPERIENCE

<b>The MITRE Corporation</b> — Remote   McLean, VA <b>Cyber-Physical &amp; Mobile Technology</b> , <i>Electrical &amp; Computer Engineering Intern</i>	<i>June 2019 - Present</i> <i>July 2019 - Present</i>
• Utilizing Machine Learning and Data Science techniques to decode over 525 CSV files (30 million data points per CSV file).	
<b>High-Performance Computing</b> , <i>Electrical &amp; Computer Engineering Intern</i>	<i>June 2019 - August 2019</i>
• Created and managed a testbed to explore deployment of a new scheduler and resource managers, Slurm, for all HPC systems at MITRE.	
• Developed initial documentation for installation processes to be leverage by HPC systems admins for future use.	
<b>Zebra Technologies</b> — Lincoln, RI <b>Custom Applications Group</b> , <i>Software Engineering Intern</i>	<i>June 2018 - September 2018</i>
• 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.	
<b>University of Rhode Island College of Engineering</b> — Kingston, RI <b>Wearable Biosensing Lab</b> , <i>Lab Research Assistant (sponsored by LSAMP)</i>	<i>March 2017 – May 2019</i>
• 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.	
<b>General Dynamics Electric Boat</b> – Groton, CT <b>Information Technology</b> , <i>Student Technical Assistant (Security Clearance: Secret)</i>	<i>May 2017 - August 2017</i>
• 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.	
<b>University of Rhode Island</b> — Kingston, RI <b>College of the Environment and Life Sciences</b> , <i>IT Assistant</i>	<i>September 2014 - March 2017</i> <i>August 2016 - March 2017</i>

- 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.

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## 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.

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## LEADERSHIP EXPERIENCE

**Eta Kappa Nu (HKN) , Honor Society of IEEE – B Chapter**

*March 2020 - Present*

*Member*

- Attending weekly meeting and events.

**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 (ΘΤ), A Professional Engineering Fraternity – ΣΓ Chapter**  
*Web Committee Chair*

*February 2016 - May 2019*

*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**  
*Alumni*

*September 2015 - March 2017*

*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.

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## **VOLUNTEER EXPERIENCE & STEM OUTREACH**

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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*

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## **HONORS & AWARDS**

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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*

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## **CERTIFICATION**

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Passed Fundamentals of Engineering Exam (FE)

*January 9th, 2020*