

# Christabel Acquaye

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## INTERESTS

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Machine Learning

Natural Language Processing

Deep Learning

## WORK/RESEARCH EXPERIENCE

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### Emerging Leaders in Technology and Engineering(ELiTE), Emerging Labs

Remote

*AI Team Lead*

*July 2019 – Aug 2022*

- Organized and delegated tasks culminating in the development of the ELiTE Virtual Counsellor project.
- Independently developed NLP models and systems used in efficient app conversations while automating other processes.
- Empowered instructors by designing curriculum on AI used in tutoring students during ELiTE Camps.

### Karaagro AI

Accra, Ghana

*Research Assistant*

*Aug. 2021 – May 2022*

- Collaborated and co authored the KaraAgroAI Cocoa and Maize Datasets, published on Havard Dataverse.
- Validated and evaluated pretrained models on the KaraagroAI Datasets to verify accuracy in downstream tasks specifically tasks related to Ghana.

### Kwame Nkrumah University of Science and Technology

Kumasi, Ghana

*Software Developer*

*Jan 2020 – Aug 2020*

- Independently implemented the Genetic Algorithms used in the Exam Time Table Scheduler.

*Research Assistant*

*Sept 2019 – June 2020*

- Researched, experimented, and tested different toll solutions for Ghana.
- Co authored the GhanaToll paper published in the International Journal of Computer Applications.

### Electricity Company of Ghana, ECG

Accra, Ghana

*Lead Intern*

*July 2018 – Aug 2018*

- Coordinated and delegated tasks assigned to interns.

*Computer Engineering Intern*

*June 2018 – Aug 2018*

- Ensured smooth running of the company's operations by troubleshooting and resolving hardware related issues.
- Revamped IT software systems installing tailor-made ECG software and Operating Systems.

### Ghana-India Kofi Annan Centre of Excellence in ICT(AITI)

Accra, Ghana

*Computer Engineering Intern*

*June 2017 – Aug 2017*

- Represented the Institute at the 2017, Data conference exhibition
- Co developed the Linux Infrared Air conditioner controller (LIRC) using raspberry pi project.

## TEACHING EXPERIENCE

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### University of Maryland

College Park, USA

*Teaching Assistant*

*Aug 2022 – Present*

- CMSC 320 - Introduction to Data Science
- CMSC 131/CMSC 132 - Object Oriented Programming I and II

### ELiTE Education

New York, USA

*Volunteer Tutor*

*July 2016 – Present*

- Tutored college and high school students in Hardware Programming and Machine Learning.

### Academic City University College

Accra, Ghana

*Faculty Assistant*

*May. 2021 – Aug 2022*

- TA for Emerging Technologies, Matlab for Algebra and Python Programming.

- Developed course syllabus, quizzes and exams for Python Programming Class.

## Kwame Nkrumah University of Science and Technology

Kumasi, Ghana

Teaching Assistant

Sept. 2019 – June 2020

- TA for Computer Architecture, Semiconductor Devices, Engineering Technology (Introduction to Hardware Programming using Arduino), Basic Electronics, Embedded Systems, and Digital Signal Processing.
- Empowered students by developing lab activity manuals for students to use during lab activities.
- Motivated and preserved student's interest in studies by organizing online tutorials during the COVID-19 period.

## TECHNICAL COMPETENCES

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**Programming Languages, Frameworks, and Databases:** Pytorch, Tensorflow, Keras, Embedded C, Java, Apex, Dialog Flow, SQL (Postgres)

**Development and Design Tools:** Visual Studio Code, Code Composer Studio, Atmel Studio, Arduino, Eagle, Octave, SPSS, Proteus, Fusion, Adobe XD, Figma, GIT

**Operating Systems:** Ubuntu, Windows, Linux Mint, Debian, MacOS

**Languages:** English(Proficient), Ga(Fluent), French(Beginner)

## EDUCATION

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### University of Maryland

PhD in Computer Science

College Park, MD, USA

Aug 2022 – June 2027

### Kwame Nkrumah University of Science and Technology

Bsc in Computer Engineering; First Class Honors

Kumasi, Ghana

Sep 2015 - July 2019

## HONORS AND AWARDS

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### University of Maryland

- Dean's Fellowship for outstanding academic achievement.

Aug. 2022

### Kwame Nkrumah University of Science and Technology

- Best Graduating Female Computer Engineering Student.

Mar. 2020

- Best Female Computer Engineering Student

May. 2018

- Jerome Jackson Scholarship for highly motivated students in STEM

Aug. 2018

## SELECTED RESEARCH AND PROJECTS

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B Kommey, **C Acquaye**, and T A Abeka. GhanaToll: Barrier-Free RFID Toll Collection and Management System for Ghana. International Journal of Computer Applications 176(27):22-29, June 2020.

### Cultural Differences Analysis in Common Sense Data and Models

2022 – Present

University of Maryland

- Tools and Datasets: Pytorch, Commonsense Dataset, Social IQA Dataset, Physical Interactions Dataset.

### Cost Efficient Exploration for Reinforcement Learning

2023

University of Maryland

- Framework: Pytorch

### Evaluating Complex Visual Question Answering

2022

University of Maryland

- Tools and Datasets: Pytorch, COCO, DAQUAR, AI2D, Visual Genome Datasets

### Final Project: Multi-Fish Species Classifier

2021

Runmila AI Institute and AI Commons

- Tools and languages: Python, Tensorflow

### Brain Tumor Detector

2021

Applied SVM in CNN to train model.

- Tools and languages: Python, Tensorflow

## CERTIFICATIONS

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<b>Runmila AI Institute and AI Commons</b> <i>Certificate in Machine Learning and Deep Learning</i>	Accra, Ghana 2021
<b>Kumasi Hive Incubator</b> <i>Certificate in Internet of Things</i>	Kumasi, Ghana 2018
<b>Ghana-India Kofi Annan Centre of Excellence in ICT</b> <i>Certificate in Database Management and Administration</i>	Accra, Ghana 2017
<b>Ghana-India Kofi Annan Centre of Excellence in ICT</b> <i>Certificate in Java Programming</i>	Accra, Ghana 2016

## COMMUNITY/VOLUNTEER WORKS

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<b>Mentor</b> <i>Emerging Leaders in Technology and Engineering, ELiTE</i> <ul style="list-style-type: none"><li>Instigating interest in STEM by tutoring and mentoring students in python programming, electronics, and ML.</li></ul>	2016 - Present Accra, Ghana
<b>Scholarship Application Reviewer for the Grace Hopper Celebration</b> <i>Anita B. Org</i> <ul style="list-style-type: none"><li>Reviewed scholarship applications by different students across the world to attend the GHC 2021 Conference.</li><li>Reviewed scholarship applications by different female faculty across the world to attend the GHC 2020 and 2022 Conference.</li></ul>	2020 – 2022 Online
<b>Conference volunteer</b> <i>27th SMART-iSTEAMS-IEEE Multidisciplinary Conference, Academic City</i> <ul style="list-style-type: none"><li>Collected information of participants prior to conference in order to make relevant provisions to accommodate COVID-19 protocols.</li><li>Served as information desk representative during conference.</li></ul>	2021 Accra, Ghana
<b>Mentor, General Secretary and Tutor</b> <i>Faculty of Electrical and Computer Engineering Students, ACES</i> <ul style="list-style-type: none"><li>Empowered students by providing tuition and direction in C and python programming, electronics, and navigating engineering.</li><li>Coordinated meetings with executives and organised workshops and networking events for students with potential employers.</li><li>Organized and documented the department's electronics club meetings proceedings, submitted reports and letters within and outside the institution.</li></ul>	2017- 2020 Kumasi, Ghana
<b>Academic Mentor and Music Head</b> <i>Royal House Students and Associates, KNUST,</i> <ul style="list-style-type: none"><li>Organized academic workshops and provided counselling and guidance for students.</li><li>Managed and provided music training for musical performances during church services and events in and out of campus.</li></ul>	2018 - 2020 Kumasi, Ghana
<b>Video team volunteer</b> <i>Debian Project's developer conference, DebConf</i> <ul style="list-style-type: none"><li>Served as the video director controlling videos recorded and transmitted through the live video stream.</li></ul>	2019 Curitiba, Brazil
<b>Director for Children's Ministry</b> <i>Dominion Outreach Church</i> <ul style="list-style-type: none"><li>Organised and coordinated weekly Bible lessons.</li><li>Developed lesson plans and organised training for other Sunday school teachers to equip them with the relevant skills necessary for teaching.</li><li>Developed and organised plays and skits during church events.</li></ul>	2014-2019 Accra, Ghana
<b>Ambassador for General Electric during the Predix Challenge</b> <i>Kwame Nkrumah University of Science and Technology</i> <ul style="list-style-type: none"><li>Coordinated conversations between GE, the contestants and KNUST Students</li><li>Organised and mobilised students to support contestants from KNUST.</li></ul>	2017 Accra, Ghana