

# Chidera Biringa

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## EDUCATION

### University of Massachusetts Dartmouth

MA, US

College of Engineering, ABET Accredited

Ph.D. in Computer Science and Information Systems (Starting September 2021)

- Research Interest: Cybersecurity, Software Engineering, and Machine Learning

### University of Massachusetts Dartmouth

MA, US

College of Engineering, ABET Accredited

Master of Science in Computer Science (Expected May 2021)

September 2019 - Present

- Courses Taken: Algorithms and Complexity, Advanced Data Mining, Advanced Machine Learning, Database Design
- Grade Point Average: 3.7/4.0

### Bells University of Technology

Ota, Nigeria

College of Natural and Applied Sciences

Bachelor of Technology in Computer Science

November 2013 - May 2017

## PROFESSIONAL EXPERIENCE

### CIS Dept. - UMass Dartmouth

September 2020 - Present

Graduate Research Assistant

- Research assistant for Dr. Gokhan Kul (Interest: Cybersecurity and Database Systems)
- Developed an Automated User Experience Testing System methodology through multi-dimensional performance impact analysis

### NSA/DHS Center of Academic Excellence in Cyber Defense - UMass Dartmouth

September 2020 - Present

Graduate Fellow

- Fellow at the NSA/DHS Center of Academic Excellence in Cyber Defense at the UMass Dartmouth under the supervision of Dr. Lance Fiondella

### CIS Dept. - UMass Dartmouth

September - December 2019

Graduate Student Grader

- Former grader for the undergraduate course: *Software Process and Project Management*
- Graded assignments, projects, and exams

### CIS Dept. - UMass Dartmouth

August 2019

iOS Camp Instructor

- Worked as an instructor at the UMass Dartmouth iOS Mobile App Development Camp under the supervision of Dr. Raymond N. Laoulache
- The team taught campers programming, problem-solving and iOS mobile app development using the Swift 5 programming language

### Amuwo-Odofin Secondary School

Port Harcourt, Nigeria

Information Technology Teacher - NYSC

May 2017 - April 2018

- Worked as an Information Technology teacher at Amuwo-Odofin IT Department
- Taught Information Technology to 9th-grade students

### Nigerian National Petroleum Corporation

Port Harcourt, Nigeria

Software Engineering Intern

May - August 2015

- Worked as a software engineer at the NNPC/PPMC ETSD Department
- Developed webpages for the engineering section of the company
- Updated the software of over 100 desktop computers and laptops in the refinery

## PUBLICATION

Ongoing | *User Experience Testing through Multi-Dimensional Performance Impact Analysis*

January, 2020

- Submitted a paper to ACM/IEEE International Conference on Automation of Software Test

## TECHNICAL SKILL

Programming Languages: C, C++, Java, Python, R, SQL, HTML/CSS, JavaScript

Databases: MySQL, NoSQL

Libraries, Packages: Pytorch, Scikit-Learn, Caret, OpenCV, Pandas, Bootstrap, Quanteda, Tidyverse, Git

Software: GitHub, VSCode, MS Office,  $\LaTeX$ , Power Bi, Tableau, Godot, Travis CI

Programming Paradigms and others: OOP, FP, PP, IP, Agile Development, MVC, UML, Unit Testing, Integration Testing

## TECHNICAL EXPERIENCE

## Master's Thesis | Multi-Dimensional Performance Impact Analysis of Security Updates in Software Development Lifecycle

September 2020 - Present

- Currently, researching the multi-dimensional performance impact analysis of security updates in software
- We created a robust code stylometry feature set using statistical methods, regular expression, and Java parser
- We built regression models capable of inferring the timeframe a code update makes to a software

### Neural Network Model | Predictive Frame Inference (PIF) Model

April - May 2020

- Built an encoder-decoder convolutional neural network that can interpolate in-between frames of a given video thus increasing the frame rate
- A high definition 25 fps video was increased to 50 fps without loss in resolution, reduced length of the video, or noticeable distortions

### Database System | SQL Query Evaluator

February - April 2020

- Built an SQL query evaluator for a single-threaded database that can run TPC-H queries
- Implemented support for Select, Project, Cross Product, Union, and Aggregate operations
- Implemented standard optimization techniques like projection pushdown, selection pushdown & cross product to join conversion

### Classification Model | Authorship Attribution

November - December 2019

- Built a random forest classification model that predicts Victorian Era Authors based on their authored novels
- Sentiment features were extracted and used as features in the model

### Classification Model | Customer Response Chatbot

December 2019

- Built a Support Vector Machine (SVM) classification model to classify company response to customers inquiries
- The model was able to predict 3 correct responses from 5 sequential questions.

### Web Development | Lines

May 2020

- Built a personal portfolio website to showcase some of my work
- Built using HTML5, CSS3, and Vanilla Javascript

## CIVIC ENGAGEMENT EXPERIENCE

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### Startup Weekend - UMass Dartmouth

February 2021

#### Technical Mentor

- Volunteering to help participants with technical problems

### GSSP - UMass Dartmouth

September 2019

#### Orientation Leader

- Volunteered to lead arriving International students along their orientation journey to help acclimate them to campus life and culture
- Dedicated 5+ hours to assist students