

Cyril Bou-Harb

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Programming Languages: Java, Python, JavaScript, TypeScript, C, C++, SQL (Postgres), HTML, CSS

Frameworks: TensorFlow, Keras, Django, Pandas, NumPy, PyTorch, DataScience Library, Scikit-learn, Sequelize, OpenShift

Developer Tools: Git, VS Code, Jupyter Notebook, Vim, Android Studio, Agile, Scrum

Languages: Fluent in Arabic, English, French

Education

University of Massachusetts Amherst

GPA 3.95

Expected Graduation: Dec 2024

• **B.S. in Computer Science** | Primary Major

• **B.S. in Mathematics** (Concentration: Statistics and Data Science) | Secondary Major

Member of Commonwealth Honors College

Coursework: Data Structures and Algorithms, Software Engineering, Artificial Intelligence, Machine Learning, Computer Systems, Statistics, Discrete Math, Programming Methodology, Physical Computing, Pract and Appl of Data Management, Linear Algebra, Multivariable Calc, Differential Equations, Ethics & Social Issues in Computing, Linear Algebra for Applied Mathematics.

Experience

Software Engineer Intern

Amherst, MA

Institute for Applied Life Sciences m-health lab

June 2023 – August 2023

- Designed a web application focused on improving healthcare data quality in Alzheimer's disease research, utilizing Django and RESTful APIs.
- Achieved a significant increase 74% in survey response rates by integrating the Twilio API for SMS-based data collection, thereby enhancing data reliability.
- Developed an Android app for controlling Vector, an autonomous robot, leveraging real-time data from the accelerometer and gyroscope sensors via Android's Inertial Measurement Unit (IMU) enabling immediate control over Vector's movements.

Responsible Computing Research (CSForAll) Intern

Amherst, MA

Advanced Learning Technologies Lab | Nenna Thota

Sep. 2023 – Present

- Engineering an educational game for K-2 children from diverse socio-economic backgrounds to foster Computational Thinking, aligning with Scratch and Massachusetts DLCS standards.
- Analyzing anonymous video interview data as part of a research team to evaluate CT skill acquisition, ensuring culturally responsive and inclusive educational strategies.
- Contributing to a larger NSF-funded project, recognized with a CSForAll award, emphasizing innovation and inclusion in educational technology for young learners

Undergraduate Course Assistant: Discrete Math (CS250)

Amherst, MA

Manning College of Information and Computer Sciences

Sep. 2023 – Present

- Instructing essential concepts in set theory, formal languages, and algorithms as a course assistant for CS250.
- Conducting grading, proctoring, and leading discussion sections, supporting academic progress for 200+ students.

Recruitment and Outreach Committee for CICS

Amherst, MA

Manning College of Information and Computer Sciences

Feb. 2023 - Present

- Promoting the CICS program, by conducting engaging informational sessions for prospective students and their families.
- Sharpened organizational and presentation skills, delivering impactful information strengthening the program's reputation.

Supplemental Instructor Leader - CALCULUS II

Amherst, MA

Learning Resource Center

August 2022 – June 2023

- Taught 200+ students, developed resources, and conducted exam reviews, with 91% reporting improved grades and comprehension.
- Enhanced teaching with interactive tools and public speaking, gaining adaptability through targeted training.

Projects

Artificial Sign Language (Best Use of an AI Model) | Python, TensorFlow, NumPy, OpenCV, MediaPipe

- Awarded "Best Use of AI" by travelers.com for developing an American Sign Language translator using DL & computer vision (CV).
- Led the creation of a custom dataset of 10,000+ images using computer vision algorithms to track and capture our hand gestures.
- Generated a supervised learning ML model and then optimized it to classify various signs with over 83% accuracy.

Project Clue | C, Vim

- Designed a text-based murder mystery game using C inspired by the game Cluedo.
- Users can move through rooms, pick up/drop items and move characters to solve the mystery.

Booking a Covid Appointment | C, Vim

- Used threads, semaphores (binary and counting) written in C for a simulation of making the appointment for the COVID Test by multiple people at the same time.