Yusuf Abdi

Khoury College of Computer Science Northeastern University
Email:abdi.yu@northeastern.edu ; https://yusufabdi.sites.northeastern.edu

Professional Summary:

Energetic computer science skilled in leadership, with strong foundation in math, programming logic, machine learning, deep learning, data mining techniques, seeking to leverage solid development skills with a focus on collaboration, communication, passion, and creativity as teaching assistant for northeastern. Also, able to perform multiple tasks successfully in a high-stress environment, and team player with strong organizational skills known for accomplishing objectives.

Qualifications include:

- Technical skills include proficiency in Python, R, TensorFlow, and PyTorch, Keras, along with a solid understanding of data structures and algorithms.
- Experienced in Java, and C programing.
- Computer Proficiency (M.S. Office)
- Certified Grant Writer
- Certified Mediator at the state of Massachusetts
- Certified Mental Health First Aid U.S.A.
- Analytical thinker and agility with numbers
- Multilingual (English, Somali, Arabic, and some Urdu/Hindi)
- Computer Proficiency (M.S. Office)
- Excellent communication and interpersonal skills
- Knowledge of job market trends
- An experienced educator and interpreter
- Certified Grant Writer
- Employment program reporter (CRES and TAG)

Education:

MSCS- Computer Science, with GPA (3.6)

- **Northeastern University, Boston, (2021-2025)**
  The coursework: Intensive Foundations of Computer Science, Discrete Structures Object-Oriented Design, Data Structures, Algorithms, and Their Applications within Computer Systems. Database Management System, Machine Learning, Data Mining Techniques, Natural Language Processing, Deep Learning, and Web-Development.

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Master Program of Peace and Conflict Studies,

- The University of Massachusetts Lowell, (2015-2019).
  Coursework includes Strategies of Conflict Transformation, Community Conflict Resolution, Research Methods, Mediation, and Sustainable Housing Development & Land Use: (Conflict, Policy &Practice), Thesis about Somali-Mainers labor integration as housekeeping, caregiving, and farming.

Associate – Business Administration and Math, Middlesex Community College. (2019-2020)

Bachelor of Economics and Science,

- Mogadishu University, Mogadishu, Somalia (1999-2003) Coursework included: Economics, Mathematics, and Accounting

High School Diploma,

- Mojama Secondary School, Mogadishu, Somalia (1999)

Academic and Experience:

(**Present**) Research Collaborate, Harvard Medical School, Cardiology, (BWH)- Machine Learning Engineer – October 2023 – Present

- Design and developed deep learning models for medical image analysis
- Prepare and processed various large dataset of medical image to be compatible for
- machine learning, tasks included: normalization, augmentation, and annotation.
- Collaborate with the health care professionals understand clinical requirements and translate them into AI-driven solution.

Teaching Assistant, Spring 2024, CS 6220, Data Mining Technician, Khoury College of Computer Sciences- Part-time (2023-2025)

- Holding office hours, grading assignments, manning discussion forums
- Reading all announcements posted for students
- Attending meetings with professor and team

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Research projects

Automated Detection and Segmentation of Ascending Aorta Dilation on a Non-ECG-Gated Chest CT Using Deep Learning:

- Background: Develop a deep learning model (DLM) for automated segmentation and measurement of the ascending aortic (AA) diameter on non-ECG-gated chest CT scans. Significance: ascending aortic dilatation (>4.0 cm) increases the risk of aortic dissection, morbidity, and mortality. Often unnoticed in routine chest CT scans.
  Goal: Improve accuracy and efficiency of ascending aortic measurement for large cohort analysis.

Spring 2024, Clinical Assertion Model Natural Language Processing

- Clinical Assertion Model permits healthcare professionals to analyze unstructured clinical notes extraction and representation of clinically relevant information. Clinical assertation models is crucial for information extraction systems used in health informatics. In our case we use supervised machine learning where a model is trained on annotated datasets containing clinical narratives with marked entities and their assertion statuses. This project goal was to enhance Clinical Assertion Models using advanced NLP, aiming to improve clinical information extraction for better patient care.

Sprint 2023, Assessment of machine learning algorithms used in classification of breast cancer tumors.

- Breast cancer is the most common type of cancer among women. Early diagnosis of breast cancer is important in providing effective treatment and improving patient outcomes. In this study, we explore various machine learning techniques, including Logistic Regression, Support Vector Machines (SVM), k-Nearest Neighbors (k-NN), and Neural Networks (NNet) to classify breast neoplasms either benign or malignant using the Wisconsin Breast Cancer dataset. We also discuss potential areas for future work to improve the performance of these classifiers. Our results showed that all four algorithms achieved good accuracy and solid predictive performance, but The NNet model achieved the highest accuracy among the four models tested, indicating its potential as a powerful tool for breast cancer diagnosis.

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Fall 2022, On Database Management Systems, I had an opportunity to work on two projects,

- Design & Implement a Relational Database MySQL. I built a database that can be used to analyze bird strikes on aircraft. For an existing data set from the FAA, I built a logical data model, a relational schema, realize the relational schema in MySQL, load data into the database, execute SQL queries, a finally perform some simple analysis of the data. Second Project: Mine a Database. I extracted data from an XML document and then store the data relationally in a SQLite database. That database represents a "transactional" database. Then I did extract data from the transactional database and create an "analytical" database using a star schema in MySQL. Finally, I did query facts from the MySQL analytical database. This will require to connect to two different databases simultaneously.

Summer 2022, Redeye with Maximum Spanning Tree (MST) Algorithm,

- Northeastern University is the original node Used Euclidean distance formula, calculated the weight. The approaches, Queue, TSP: Prim's Algorithm, Minimum-weight Spanning Tree, Kruskal's Algorithm, the goal was to find lowest time complexity which was Kruskal's algorithm O(V2)

Fall 2021, Network Traffic Analyzer

- Network Traffic Analyzer is a package analyzer software that screens all network movement. The project is fulfilled with Java programming language. The application admin of the system can take network packets and analyze data received/sent from/to the network. System performance will be enhanced, and traffic will be controlled.

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Professional Experience:

Career Services Manager (C.S.M.), *International Institute of New England-Lowell* Lowell, MA (04/2021 – *Present*)

- Manage IINE-Lowell's employer partners and administrate the day-to-day working relationships with these partners.
- Develop individual employment plans for IINE-Lowell clients incorporation with IINE-Lowell case management staff by determining their interests, abilities, and case management needs
- Hire, supervise and evaluate the Employment Specialist.
- Provide ongoing support and supervision to the Commonwealth Corps Intern and
- other interns assigned to the Employment team in IINE-Lowell.
- Manage contractual and IINE required employment outcomes, enrollments, and
- reporting in the Match Grant, CRES, CIES, and C.N.A employment.
- Design and manage workforce orientation classes for IINE clients.
- Oversee all job counseling, job coaching, and group job search workshops sponsored
- by the IINE-Lowell Employment team.
- Assess applicants' eligibility for training programs by supporting the administration
- of written and oral English tests.
- Support new International Institute clients to identify appropriate skills training
- opportunities and secure jobs related to their training.
- Represent the organization at meetings, conferences, and events as assigned.
- Contribute to program data collection following contractual guidelines.
- Plan and teach the Job Readiness portion of the ESOL/CNA training program classes,
- prepare classroom materials, and evaluate student progress.
- Recruit and coordinate the participation of IINE-Lowell employment partners in the ESOL/CNA training program.
- Oversee the placement of graduates of the ESOL/CNA training program.
- Provide individualized job retention/advancement counseling for clients upon their
- completion of training program courses.
- Provide post-placement support services to ensure job retention and record any changes in employment status.

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Employment Specialist, *International Institute of New England-Lowell* Lowell, MA (01/2014 – 04/2021)

- Intakes for new arrivals
- Keep track of caseload and prioritize client assistance
- Meet with the clients (newly-enrolled and older) and discuss employment needs
- Search for job openings that are appropriate for our clients (accounting for
- transportation and varying levels of English proficiency, formal education, formal
- work experience)
- Assist clients with filling out and submitting applications (paper, online, etc.) and
- developing and e-mailing cover letters and resumes
- Take clients to interviews and assist/advocate for them
- Assist clients with human resources paperwork
- Trouble-shoot/mediate when issues come up with clients & employers/co-workers
- Provide or arrange for interpretation/translation for employment-related matters
- Check-in with clients and employers about how the employment is going
- Teach the clients about U.S. workplace culture/expectations/etiquette, the process of
- getting a job, and general employment skills, through periodic workshops
- Responsible for preparing and reporting CRES/ TAG programs (Monthly, Trimester,
- and Annually) to the Massachusetts Office for Refugees and Immigrants (MORI)

Employment Counselor, *U.S. Committee for Refugees and Immigrants/ Vermont Refugee Resettlement Program,* Colchester, VT (7/2009 – 12/2013)

- Intakes for new arrivals, kept track of caseload and prioritized client assistance
- Met with the clients (newly-enrolled and older) and discussed employment needs
- Searched for job openings that are appropriate for our clients (accounting for
- transportation and varying levels of English proficiency, formal education, formal
- work experience), assisted clients with filling out and submitting applications (paper, online, etc.) and developed and e-mailed cover letters and resumes
- Took clients to interviews and assist/advocate for them assisted clients with human resources paperwork. Trouble-shoot/mediated when issues come up with clients & employers/co-workers. Provided or arranged for interpretation/translation for employment-related matters. Checked-in with clients and employers about how the employment is going. Developed and instructed the clients about U.S. workplace
- culture/expectations/etiquette, the process of getting a job, and general employment skills, career plan, job application, taxes, employees' right, safety at work, and workplace dispute resolution through periodic workshops Developed and instructed employment workshop and Job Club orientation; topics include: working force in America, career plan.   **CONTINUED**

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Interpreter, *U.S. Committee for Refugees and Immigrants/ Vermont Refugee Resettlement Program*
Colchester, VT (7/2009 – 12/2013)

- Provided culturally sensitive Somali-English and Arabic-English interpretation

Computer Instructor, *Fletcher Free Library*
Burlington, VT (04/2010 – 12/2013)

- Prepared lesson plans and taught basic computer skills to Somali-speakers

Teacher, *Mojama School*
Mogadishu, Somalia (09/2003 – 06/2004)

- Taught science and math to elementary students
- Prepared and implemented lesson plans
- Assessed and reported student progress