

Jamal El Harake

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Education

American University Of Beirut

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Bachelor of Science in Computer Science

Beirut, Lebanon

- **Relevant Coursework:** Data Structures and Algorithms (C++), Prob & Stat w/Computational Applications (Python), Web Development, Machine Learning, Data Science(Python / R), Software Engineering, Database Systems, Operating Systems.
- **Dean's Honor List:** Fall 2023-2024

Projects

MMDB | *EJS, CSS, JavaScript, Node.js, Express.js, MongoDB, jQuery, Bootstrap*

- Co Developed MMDB, a web application inspired by IMDb, allowing users to browse, search, and review movies and TV shows. Implemented user authentication using Google and Facebook OAuth as well as an Enhanced search functionality with autocomplete feature using MongoDB queries.
- Designed aesthetically pleasing dynamic pages to showcase top-rated movies, top picks, and user-specified watch lists.
- Integrated MongoDB database populated with movie data sourced from a movie database API.

Facial Emotion Recognition App | *Python, TensorFlow, Keras, OpenCV*

- Developed a facial emotion recognition system using TensorFlow Keras and Python, trained on the FER 2013 dataset consisting of 38,000 images. Detecting and classifying seven different facial expressions using a Convolutional Neural Network (CNN) model .
- Implemented a live video capturing app using OpenCV, allowing real-time detection and classification of facial expressions.

Corruption Prediction System | *Python, NetworkX, Matplotlib, CuPy*

- Led a team project to visualize and analyze voting behavior data of American legislators and predict instances of corruption convictions using network-based techniques.
- Achieved an accuracy of approximately 80% in predicting potential convicted connections using diverse prediction methods (Cosine, NMeasure, Pearson, RootedPageRank, MinOverLap)
- Implemented asynchronous HTTP requests using aiohttp and asyncio to fetch roll call voting data from the ProPublica Congress API from 2013 until 2023.
- Worked in a WSL environment to address library compatibility issues to employ a Custom distance Kernel using CuPy, a GPU-accelerated library, to perform matrix operations efficiently and speed up the computation process of a total of 5,503,512 votes from 952 different congresspersons

TA Evaluation System (TAES) | *Laravel, MySQL, Bootstrap, jQuery, MAMP*

- Co developed a software platform enabling students to evaluate their Teaching Assistants (TAs) anonymously at the end of each semester. The system also provides professors with insights into the TA's performance.
- Collaborated as a team member in all phases of the project, including requirements gathering, design, implementation, testing, and deployment
- Recognized the importance of communication in overcoming challenges, particularly during remote collaboration

Video Game Prototype Development | *Unity, C#, Blender 3D,*

- Developed a Unity-based video game prototype featuring first-person gameplay, shooting mechanics, parkour challenges, and puzzle-solving elements.
- Integrated diverse gameplay mechanics including environmental interactions as well as A* algorithm for enemy navigation .

Technical Skills

Programming Languages: *Java, Javascript, C++, C#, R, Python, HTML5*

Technologies: *React.js, Node.js, Express.js, TensorFlow, PyTorch, jQuery, Bootstrap, Node.js, MySQL, Linux, Git & GitHub, CUDA*

Concepts: *Compiler, Operating System, Virtual Memory, Cache Memory, Artificial Intelligence, Machine Learning, Neural Networks, Parallel Computing, API, Agile Methodology*