Lama Ayoub

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Beirut, Lebanon

EDUCATION

Lebanese American University, Beirut, Lebanon | Expected Graduation Dec. 2024
Bachelor of Science in Bioinformatics
Minor in Data Analytics

Makassed KBWH School, Beirut, Lebanon | Sep. 2016 – Jun. 2021
Lebanese Baccalaureate, Life Sciences Section

RESEARCH EXPERIENCE

Independent Researcher - Undergraduate Research & Discovery Program
Lebanese American University | May 2022 - May 2023

•**Certified** as a Social Behavioral Educational Researcher by the Collaborative Institutional Training Initiative (CITI Program).
•**Extracted** information about the challenges facing the bioinformatics undergraduate and graduate students in Lebanon.
•**Employed** a case study strategy between Lebanon and Jordan in the field of bioinformatics to compile data and compose comparative reports.
•**Created** a survey to assess the needs of bioinformatics students while adhering to the Institutional Review Board (IRB) protocols.
•**Collaborated** with a colleague on developing a network that fosters collaboration and information exchange among Lebanese bioinformaticians.

PROJECT PORTFOLIO

Protein Domain Analysis - Human Insulin Receptor
Lebanese American University | Introduction to Bioinformatics course | May 2023

•Identified domain names and locations, emphasizing functional insights.
•Conducted BLAST searches, analyzed alignments, and identified homologous domains.
•Used MUSCLE for multiple sequence alignment, highlighting conserved positions.
•Generated a WebLogo, discussing structural importance with a color-coded scheme.
•Constructed a phylogenetic tree using Simple Phylogeny and iTOL.
•Described tree topology and evolutionary relationships among proteins/species.

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PetitJean Index Calculator
Lebanese American University | Computational Drug Design Course | Nov. 2023

•Collaborated with a colleague on a coding project centered on crafting a Python script for the PetitJean index calculation.
•Developed a script that handles diverse input, taking either a directory with molfile-formatted molecules or a single sdf file encoding multiple chemical structures. The command-line flexibility enhanced usability.
•Engineered the program to deliver concise results—a list of molecule names paired with their respective PetitJean index values.
•Elevated the project's accessibility by integrating a user-friendly graphical interface.

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Machine Learning Classification
Lebanese American University | Data Mining course | Nov. 2023

•Collaborated on a data mining project centered on car acceptability prediction.
•Conducted graphical exploration, identifying key features influencing car acceptability predictions.
•Employed logistic regression, LDA, QDA, and KNN, evaluating their performance and determining optimal parameters.
•Generated ROC curves, computed AUC values, and conducted a comprehensive assessment of model effectiveness.
•Utilized 5-fold cross-validation and bootstrapping, providing robust estimates of test error and standard errors.

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Case Study: DPP-4 Inhibitors
Lebanese American University | Computational Drug Design course | Nov. 2023

•Explored original development motives and identified challenges in the design process of DPP-4 inhibitors through a comprehensive examination of the literature.
•Analyzed methodologies and findings from selected research papers.
•Delivered a concise and compelling oral presentation, effectively communicating findings to peers.

EXTRACURRICULAR ACTIVITIES

Finalist, 6th LAU Case Competition | 2nd Place, MEVP Case | Mar. 2023 - Jun. 2023
•Awarded Certificate of Recognition for exemplary problem-solving abilities and demonstrating aptitude in critical thinking during case strategy development.
•Applied strategic thinking and decision-making to deliver high-quality results within tight time constraints.

Lebanese Red Cross - Youth Sector | Nov. 2022 - Present
•Produced weekly reports & managed social media content, including event photography as part of the PR & Media subcommittee.
•Completed the Psychosocial Support (PSS) Training of the Lebanese Red Cross Beirut Center.
•Delivered workshop sessions on Sustainable Consumption & Production as a program facilitator.

Corner Sports Club | Sep. 2022 – Present
•Passionate Dance apprentice.

15th Global Classroom Model United Nations Annual High School Conference, LAU | Feb. 2022
•Represented Jamaica as a delegate on the Historical International Monetary Fund Committee

Parlement des Etudiants de l'Université Saint Joseph Participant | Dec. 2018 – Mar. 2019
•Acquired diplomacy, negotiation, and adaptability skills essential for effective engagement in political environments and addressing diverse challenges.

WORKSHOPS ATTENDED

•Certificate of Completion: "**Start your Bioinformatics/Data Science Project Portfolio**" Online Course through Harris Interdisciplinary Education.
•Statement of Accomplishment: "**Introduction to R**" Course on DataCamp.
•Recipient of **Beirut AI Scholarship**.
•Certificate of Completion: **Microsoft Trainer**.
•Certificate of Attendance: "**Introduction to AI & Machine Learning**" Workshop, Bioinformatics & Computer Science Club in partnership with Beirut AI.
•Certificate of Attendance: "**Fall in Love with Machine Learning**" Workshop.
•Attended "**All About Bioinformatics**" Workshop, Bioinformatics Club, LAU.
•Attended **Stuttering Awareness Session** by Rotaract Beirut.

COMPUTER SKILLS & LANGUAGES

•Java, Python, HTML, R
•Microsoft Office, **SPSS** statistics

•Fluent in spoken and written **Arabic** and **English**
•Professional working proficiency in **French**
 •Beginner in **German**

References are available upon request.