

Ala Jararweh

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RESEARCH INTEREST

- **Natural Language Processing:** Large Language Models, Attention Mechanisms, Bias Detection and Mitigation.
- **Deep Representation Learning:** Computer Vision, Contrastive Learning, Zero-Shot and Few-Shot Learning, Domain Adaptation.
- **Computational Biology:** Foundation Models in Biology, Single Cell.

EDUCATION

B.Sc in Computer Science

Jordan University Of Science and Technology (JUST)

GPA: 3.97/4.20 (1st among 85 students)

Irbid, Jordan

September 2014-June 2018

Selected Courses: Data Structures and Algorithms (A+), Analysis and Design of Algorithms (A), Theory of Computing (A+), Operating Systems (A+), High-Performance Computing (A+), Network Programming (A+).

MSc in Computer Science and Engineering

The University of New Mexico (UNM)

GPA: 4.04/4.33

NM, USA

August 2020-August 2022

Selected Courses: Machine Learning (A+), Management of Databases (A), Theory of Computation (A+), Computer Network (A+), Software Foundation (A+).

PhD in Computer Science and Engineering

The University of New Mexico (UNM)

NM, USA

August 2022-Current

WORK EXPERIENCE

Undergrad intern (Erasmus+ Program)

Piraeus University of Applied Sciences

Athens, Greece

June 2017 - September 2017

Main project: Design Android applications that process pictures, videos, and records using camera and microphone APIs. Store the retrieved data in a designated database. Analyze the data using machine learning models to identify patterns.

Teaching Assistant

Jordan University Of Science and Technology, Department of Computer Science

Irbid, Jordan

September 2018 - June 2019

Courses taught: Intro to AI, Algorithms, Computer Architecture, and Linear Algebra.

Research Assistant

The University of New Mexico, Department of Computer Science

NM, USA

January 2021 - May 2022

Project: Utilize transfer learning to detect and mitigate political bias in NLP.

Research Assistant

The University of New Mexico, Department of Accounting

NM, USA

May 2022 - January 2023

Project: Fine-tune the BERT model to track potential climate changes and predict stock prices.

Research Assistant

UNM Comprehensive Cancer Center, TumorAI Lab

NM, USA

January 2023 - Current

Project: Develop an attention-based deep learning model for generating gene-centric embeddings from textual sources.

SKILLS and FRAMEWORKS

Python, C, C++, Java, Prolog, Haskell, C#, L^AT_EX, GitHub, Jupyter Notebook, PyTorch, TensorFlow, Amazon EC2, SageMaker, and MTurk, Lambda Labs, Microsoft Azure ML Studio.

RESEARCH EXPERIENCE

POLOR: Leveraging Contrastive Learning to Detect Political Orientation of Opinion in News Media, FLAIRS 2024.

- Develop a fine-tuned BERT model that employs attention-based contrastive learning to detect the political orientation of news articles.
- Perform Zero-Shot and Few-Shot learning to measure model transferability to novel, news outlets, topics, news types, and authors.

GeneLLM: Unveiling Zero-shot Prediction for Gene Attributes through Interpretable AI, MLGenX @ ICLR 2024.

- A large language model that utilizes transcriptome data and gene textual summaries to synthesize task-specific embeddings.
- A complete framework that performs enrichment analysis, clustering, regression, and single and multi-label classification.

DeepVul: Predicting Human Essential Genes Via Multimodal Representation Learning Techniques, Ongoing.

- Learn a shared latent space between gene essentiality and gene expression that enables prediction and modality transformation
- Learn gene-to-gene interaction by utilizing various deep metric learning loss functions such as Triplet Loss, and N-pair Loss.

AWARDS AND ACHIEVEMENTS

- Honored as the first-ranked student in my batch during undergraduate study.
- Recognized on the Dean's List five times for exceptional academic performance during the undergraduate program.

CERTIFICATIONS

Natural Language Processing with Classification and Vector Spaces,
Applied Social Network Analysis in Python, and
Machine Learning.

Coursera

Machine Learning APIs,
Intro to ML: Image Processing, and
Intro to ML: Language Processing.

Qwiklabs