

Ali Al-Ramini

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PERSONAL SUMMARY

Passionate about building modern data-driven solutions for business and technology, working on research projects with the NSF and NDOT. In addition, worked with several startup companies with 4+ years of experience in Data Analytics, machine learning, deep learning, and AI.

SELECTED ACCOMPLISHMENTS

- Mechanical and Architectural engineer with four years of experience in research, development, experiments design, data science, and machine learning.
- Quantified the effect of newly added infrastructure on cycling volumes using machine learning methods.
- Built a Deep learning LSTM model that predicts the COVID-19 cases worldwide. The model ranked top 10 in the Global XPRIZE Pandemic Response Challenge.
- Utilized Clinical data to build a deep learning model that successfully diagnoses Peripheral Artery Disease (PAD) using a few biomechanics features, which reduces cost and time to reach a diagnosis.
- Assisted in building and establishing MEMS behavior by exciting the MEMS using a mechanical shaker and doppler laser vibrometer. Also, helped integrate an inertial sensing and neural computing MEMS unit.

FULL-TIME EXPERIENCE

Research & Development Experience

University of Nebraska-Lincoln, Lincoln, NE

Jan 2019 - Present

(Data Science, and Machine Learning Research Projects)

Research Assistant & PhD Student

- Quantifying cycling volumes and the effect of newly added bicycling infrastructure using machine learning. (The project was funded by the Nebraska Transportation Department (NDOT)).
- Predicting COVID-19 cases worldwide using a deep learning algorithm. (Top 10 Award in XPRIZE Pandemic Response Competition).
- Utilizing clinical data for disease diagnosis, severity estimation, and treatment effectiveness using deep learning algorithms.

Industry Experience

Data Science Consultant (EBRD Funded)

Little Thinking Minds, Amman, Jordan

April 2019 – Present

(Interactive Data Visualization and Machine Learning)

- Demonstrating Platform performance through interactive visual dashboards in Tableau.
- Handling and Analyzing Big data using SQL, R, and Python.
- Predictive modeling of customer activities.
- Identifying future customers through machine learning.
- Retention, churn, CAC, LTV analysis for B2C.
- Maintaining health metrics dashboards such as DAU, MAU, stickiness, retention...etc.

Data Science Consultant

Jordan Insurance Company (JIC), Amman, Jordan

September 2022 – Present

(Interactive Data Visualization and Machine Learning)

- Visualizing the company's essential metrics for multiple departments.
- Retention and churn analysis for several departments.
- Performing statistical testing analysis.
- Building and deploying machine learning models for specific tasks.

EDUCATION

- Ph.D., Mechanical and Materials Engineering, University of Nebraska-Lincoln, NE. 2020 - Present
- M.S., Architectural Engineering, University of Nebraska-Lincoln, NE. 2019 - 2020
- B.S., Mechanical Engineering, University of Jordan. 2018

SKILLS & STRENGTHS

• Data Science • Machine Learning • Deep Learning • Data Modeling • Cohort Analysis • Data Visualization
 • SQL • R • Python • QGIS • ArcGIS • SAS • Big Data • Statistics • AWS • TensorFlow • TensorBoard •
 PyTorch • Adaptive Learning • Strategic Planning • Tableau • MATLAB • C++ • MS Office • Power BI •

PUBLICATIONS

- Hasan, M., Al-Ramini, A., Abdel-Rahman, E., Jafari, R. and Alsaleem, F., **2020**. Colocalized Sensing and Intelligent Computing in Micro-Sensors.
- Al-Ramini A, Takallou MA, Piatkowski DP, Alsaleem F. Quantifying changes in bicycle volumes using crowdsourced data. *Environment and Planning B: Urban Analytics and City Science*. January **2022**. doi:[10.1177/23998083211066103](https://doi.org/10.1177/23998083211066103)
- Alsaleem, F., Al-Ramini, A., Takallou, M.A. and Piatkowski, D.P., **2020**. *A Big Data Approach for Improving Nebraska Cycling Routes* (No. M095). Nebraska. Department of Transportation.
- Al-Ramini A, Piatkowski DP, Freifeld A, Alsaleem F. How the pandemic changed bicycling: Lessons from The Midwest. **2022** *State of Planning Transportation*. https://issuu.com/apatransport/docs/2022_sotp
- Al-Ramini, A.; Hassan, M.; Fallahtafti, F.; Takallou, M.A.; Rahman, H.; Qolomany, B.; Pipinos, I.I.; Alsaleem, F.; Myers, S.A. Machine Learning-Based Peripheral Artery Disease Identification Using Laboratory-Based Gait Data. *Sensors* 2022, 22, 7432. [https://doi.org/ 10.3390/s22197432](https://doi.org/10.3390/s22197432)

CONFERENCE PRESENTATIONS

- 2021. Al-Ramini*, Ali, Mohammad Takallou, Daniel Piatkowski, & Fadi Alsaleem. Quantifying the Effect of Signage on Bicycle Ridership. Presentation at the 100th Annual Meeting of the Transportation Research Board; Washington D.C; January 25-29.

PROJECTS

Big Data Approach to Analyze Nebraska Cycling Routes (2019 –2020)

Research Project Funded by the Nebraska Department of Transportation.

- Created statistical analysis and visualization of cyclist data.
- Built machine learning models to predict the effect of weather on cycling activities.
- Performed statistical Correlation study between Strava cycling application and stationary counters data.
- Used GIS software to properly analyze and visualize the data.
- Quantified the effect of newly added infrastructure on cycling activities using machine learning methods.

Colocalized Sensing and Intelligent Computing in Micro-Sensors (2019 – 2020)

Research Project Funded by the NSF.

- Demonstrated a reservoir computing scheme using a single MEMS sensor to perform colocalized sensing and computing to reduce the cost of reservoir computing implementation.
- Studied the effect of continuous and shock signals on MEMS using a mechanical shaker and laser Doppler Vibrometer.

COVID-19 Rapid Response (2020 – Present)

Research Project Funded by the University of Nebraska

- Used several data sources to predict COVID-19 hotspots, including smart thermometer data, demographics, and mobility.
- The prediction model ranked as one of the Top 10 predictions in the XPRIZE Pandemic Response Global Challenge.

- Showed the effect of COVID-19 on the cycling activities, and published the results in the 2022 Transportation Planning

Peripheral Artery Disease (PAD) Identification and quantifying treatment effectiveness using Deep Learning and Artificial Intelligence (2021 – Present)

Research Project Funded by the NSF

- Built a machine learning neural network model that identifies Patients with PAD.
- Estimating PAD treatment effectiveness using machine learning probabilistic models.

AWARDS

- 2021 TRB MATC/NTC Scholarship
- Ranked Top 10 XPRIZE Pandemic Response Global Challenge.

Ph.D. COURSE WORK

Data Visualization • Data Science • Linear Models • MEMS and Machine Learning • Machine Learning • Deep Learning • Advanced Dynamics and Vibrations • Engineering Advanced Mathematics • Lab View (sensors and data acquisition) • Building Control

CITI Programs Training

- Group 1: Biomedical Research • Group 2: Good Clinical Practice (GCP) • VA ORD Biosecurity Training
- VA Human Subjects Protection