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 3+ years of experience in Data Analytics, machine learning, deep learning, and AI.

SELECTED ACCOMPLISHMENTS

- Mechanical and Architectural engineer with three 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 **Aug 2018 – 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.

CONSULTING/PART-TIME EXPERIENCE

- Xioner (Data Science consultant), 2019 - Present
- MedCloud Systems (Machine Learning Consultant), 2019-2020
- Count Apps (Data Mining Consultant), 2020 - 2021

EDUCATION

- Ph.D. Mechanical 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

- 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
- 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.

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.

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 PAD in Patients.
- Estimated the 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