Alaa Alghwiri
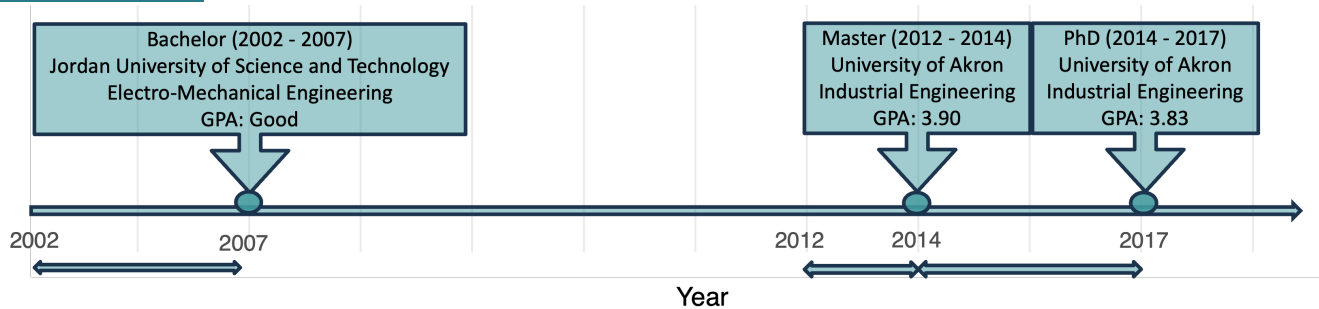
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Professional Summary

Dedicated Data Scientist and Educator with a Ph.D. in Industrial Engineering and over 7 years of impactful experience. I focus on making complex topics accessible and engaging, designing courses that combine theoretical knowledge with practical skills. Known for fostering an inclusive and dynamic learning environment, I am passionate about guiding students to understand and apply their skills effectively.

EDUCATION

Bachelor (2002 - 2007)
Jordan University of Science and Technology
Electro-Mechanical Engineering
GPA: Good

Master (2012 - 2014)
University of Akron
Industrial Engineering
GPA: 3.90

PhD (2014 - 2017)
University of Akron
Industrial Engineering
GPA: 3.83

2002   2007   2012   2014   2017

Year

Teaching Experience

Adjunct Professor| TrineOnline University | Part Time | June 2024 - Current

- Deliver course materials focused on statistical methods and analysis techniques pertinent to IT research. Guide students in applying statistical tools to real-world IT problems and projects
- Teach fundamental and advanced concepts of computer science using Python. Create hands-on projects to reinforce learning and encourage practical application of programming skills
- Instruct students on the principles and practices of data science and big data analytics

Data Science Instructor | Simplilearn | Part Time | April 2023- Current (Rating: 4.6/5.0)

- Instructed comprehensive courses on Data Science, covering a spectrum from foundational mathematical and statistical concepts to advanced topics
- Designed and delivered engaging modules on data exploration, visualization techniques, and best practices, fostering a deep understanding among students
- Equipped learners with practical skills in applied Data Science and Machine Learning, utilizing both R and Python programming languages
- Received consistently positive feedback for adeptly balancing theoretical knowledge with hands-on learning experiences, ensuring students grasp concepts effectively and confidently apply them in real-world scenarios
- Demonstrated expertise in simplifying complex concepts, fostering a dynamic and inclusive learning environment, and providing personalized guidance to students of varying skill levels, contributing to high course completion rates and student satisfaction

Professional Experience

Senior Data Scientist | University of Pittsburgh | Center for Population Health Management | Full Time | July 2022 - Current

- Spearheaded the development of precise predictive models aimed at identifying patients susceptible to adverse events through the implementation of sophisticated machine learning methodologies

- Tested the effectiveness of a multifaceted Electronic Health Records (EHR)-based Population Health Management (PHM) intervention to improve evidence-based Chronic Kidney Disease care in high-risk patients
- Utilized mixed-effect models to analyze the impact of various factors on pain, fatigue, and depression, providing valuable insights into effective intervention strategies
- Designed and implemented a Tkinter application in Python to map addresses into the Area Deprivation Index (ADI), facilitating targeted resource allocation for underserved communities

C0-Founder and CTO | Algebra Intelligence | <u>Part Time</u> | January 2020 - June 2022

- Led a pioneering team in creating and deploying Taqtak, a groundbreaking mobile/web application that revolutionizes real-time monitoring within energy plants. Successfully secured $700,000 in funding in the pre-seed stage
  - Spearheaded the entire development lifecycle from conceptualization to execution, overseeing database architecture, backend infrastructure, and front-end design to ensure seamless integration and optimal performance
- Led the data science team in the conceptualization and development of an energy generation forecasting tool using advanced statistical analysis and machine learning algorithms

Data scientist | University of Pittsburgh | Office of the Provost | <u>Full Time</u> | October 2017-June 2022

- Utilized data analytics tools to automate generation of yearly/ad-hoc insights in static and dynamic formats, integrating data from multiple resources for students, faculty, and University data management
- Improved University of Pittsburgh's US News Ranking by 4 steps (between 2020 and 2021) using cutting-edge Machine Learning techniques including SVM, Random Forest, and Gradient Boosting
- Developed highly accurate (96%) predictive models for students' success indicators (retention, dropout, and graduation) across all 3 regional campuses, enabling proactive advising for students in need
- Collaborated with schools' deans to make data-informed investment decisions, optimizing the school's US News and World Report ranking
- Automated recurring reports on gender and ethnic group equity, as well as admission and financial aid reports for the office of the provost and deans

PUBLICATIONS (Publications listed below are hyperlinked for easy access)

- **Journals:**
  - Electronic Health Record Population Health Management for Chronic Kidney Disease Care: A Cluster Randomized Clinical Trial
  - A clinician's guide to understanding and critically appraising machine learning studies: a checklist for Ruling Out Bias Using Standard Tools
  - Predictors of sleep quality among university students: the use of advanced machine learning techniques
  - Use of Guideline-Recommended Medication Therapy in a High-Risk CKD Population in the Kidney CHAMP Trial
  - 399-P: Association of Social Determinants of Health with Initiation of Novel Glucose-Lowering Drugs in Patients with Diabetes
- **Conference Papers:**
  - University parking system analysis through discrete event simulation. Proceeding of the 2017 Industrial and System Engineering Conference- Pittsburgh-PA
  - Modeling and optimizing university shuttle bus system through bus diversion. Proceeding of the 2017 Industrial and System Engineering Conference- Pittsburgh-PA
- **Conference Posters:**

- Kallem CJ, Roumelioti M, Alghwiri AA, Yabes JG, Jhamb M, Unruh M. Day-to-day and diurnal variations in patient-reported symptoms among patients on dialysis. Poster presentation forthcoming at: National Kidney Foundation 2024 Spring Clinical Meetings. May 14-18, 2024; Long Beach, CA. Abstract ID: 4454
- Kallem CJ, Alghwiri AA, Yabes JG, Roumelioti M, Erickson S, Unruh M, Vodovotz Y, Jhamb M, Steel JL. Associations between pain, depression, fatigue, and cytokines in patients with end-stage kidney disease. Poster presentation forthcoming at: Society of Behavioral Medicine 45th Annual Meeting & Scientific Sessions. March 13-16, 2024; Philadelphia, PA. Abstract ID: 1623084
- Manisha Jhamb, Melanie Weltman, Susan Devaraj, Linda-Marie Lavenburg, Zhuoheng Han, Alaa Alghwiri, Gary Fischer, Bruce Rollman, Thomas Nolin, Jonathan Yabes. Electronic Health Record based Population Health Management to optimize care in CKD: A Cluster Randomized Clinical Trial (Kidney CHAMP): American Society of Nephrology (ASN) 2023; Philadelphia, PA
- MR Weltman, Z Han, AA Alghwiri, J Yabes, LU Lavenburg, TD Nolin, M Jhamb. Use of guideline-recommended medication therapy in a high-risk chronic kidney disease population in the Kidney CHAMP trial: American Society of Nephrology (ASN) 2023; Philadelphia, PA
- Susan M. Devaraj, Jonathan Yabes, Alaa Alghwiri, Manqi Cai, Linda-Marie Lavenburg, Khaled Abdel-Kader, Manisha Jhamb. A demographic and community characteristic comparison of advanced chronic kidney disease patients seeing versus not seeing a nephrologist: American Society of Nephrology (ASN) 2022; Tampa, FL

TRAINING & CERTIFICATES

- Computational thinking using Python- 2022 (MITx)
- Introduction to Computer Science and Programming Using Python- 2020 (MITx)
- SQL Tips, Tricks, & Techniques- 2019
- Git Branches, Merges, and Remotes- 2019
- Python for Data Science- 2018
- Extending Hadoop for Data Science- 2018
- Machine Learning A-Z: Hands on Using R and Python- 2018
- Learning Git and GitHub- 2018
- Mastering Tableau for Visualization- 2018
- Advanced SQL for Data Scientists- 2017
- Apache Spark for Big Data Applications- 2017
- Machine Learning and AI foundation- 2017
- Practical Data Science in R- Certificate, 2017
- Advanced Analytics in R for Data Science- 2017
- R Programming A-Z- 2017
- AWS Big Data- 2017
- Certified Six Sigma Green Belt, American Society for Quality (ASQ)- 2017
- Rapid Modeling with Simio Intelligent Objects- 2016

COMPUTER SKILLS

- Programming/Scripting: Python, R, Julia, SQL, VBA, Unix/Linux, Git
- Databases: Hadoop, Spark, PostgreSQL, MySQL, Oracle, Apache Cassandra, Mongo DB
- Cloud Services: Digital Ocean, Amazon Web Services, Google Cloud, and Microsoft Azure
- Other Tools: Tableau, Jupyter Notebook, Toad, Ubuntu VM, MS Office, Simio, Jira and Docker

SOFT SKILLS

- Critical Thinking, Curiosity, Problem Solving, Professional Communication, Creativity, Lifetime Learning, Professional Presentations, Public Speaking, Multi-domain Knowledge and Story Telling