BABAK M. DAVANI

DATA SCIENTIST

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Google Scholar

RELEVANT EXPERIENCES

Data Analyst | Freelance

JAN 2021 - Present, CANADA

Utilized R Studio and JupyterLab to conduct comprehensive data cleaning, analysis, and visualization for clients within the health and higher education sectors.

- Developed robust data pipelines to facilitate well-informed decision-making by performing data cleaning, exploratory data analysis, data mining, and data modeling.
- Applied advanced Social Network Analysis techniques calculating network metrics (centralization, density, reciprocity) and conducting QAP and ERGM for network modeling.
- Produced dynamic and customizable social network maps in R enhancing the visual representation of complex interpersonal relationships using interactive dashboards.

Clinical Researcher | Sina Trauma and Surgery Research Center

AUG 2017 - DEC 2020 TEHRAN, IRAN

Led a team of ten clinical researchers and technicians in the successful execution of a longitudinal randomized clinical trial assessing the accuracy of non-invasive hemoglobin monitoring, resulting in a peer-reviewed paper and a conference presentation.

- Designed and oversaw the entire research project, including the identification and refinement of research questions, drafting research protocols, preparing IRB documents, grant submissions, summary reports, and manuscripts.
- Conducted pilot tests and screened potential participants while successfully recruiting patients for the study, coordinated data collection through three distinct methods: interviews, physical assessments, and laboratory data charting.
- Performed in-depth data analysis using mixed effects generalized linear regression and cluster analyses, generated insightful graphs and plots using R, provided significant recommendations for improving decision-making regarding the timing of blood transfusion during surgery.

SELECT PROJECTS

Data Scientist | Abdominal Trauma Detection using Deep Learning

OCT 2023 - DEC 2023, BrainStation

Utilized the RSNA 2023 Abdominal Trauma Detection Challenge dataset, comprising anonymized CT studies from 23 top global research institutions, to develop an advanced PyTorch-based Convolutional Neural Network (CNN) model, significantly enhancing the precision of abdominal injury detection and classification in medical imaging.

PROFILE

I am deeply passionate about Data Science for its power to reveal insights and guide informed decisions. My transition from a background in healthcare and medicine into the realm of Data Science is motivated by the belief that data-driven approaches can revolutionize patient care. With a strong foundation in research methodology and design and expertise in R, Python, and machine learning, I am eager to apply my skills to tackle new challenges and drive meaningful insights.

SKILLS

Python Packages: Pandas, NumPy, SciPy, PyTorch, Scikit-learn, TensorFlow, Keras.

R Libraries: Tidyverse, ggplot2, igraph, sna, rsiena.

Database: MySQL, PostgreSQL

Data Visualization: Tableau, ggplot2, Plotly, Matplotlib, Seaborn

Analytics: Power analysis, effect sizes, multivariate analysis (regression, ANOVA), Bland-Altman, Social network analysis, Meta-analysisF

EDUCATION

BrainStation | Diploma, Data Science

SEP 2023 - DEC 2023
VANCOUVER, BC

Tehran University of Medical Sciences | Doctor of Medicine

FEB 2000 - APR 2008
TEHRAN, IRAN