Afnan Abdullahi

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Innovative Data Professional with a robust background in engineering and neuroscience, adept at leveraging advanced analytical and quantitative research techniques to drive product and service optimization. Skilled in machine learning, statistical modeling, and data analysis, with expertise in Python (Pandas, NumPy, Seaborn, PySpark), SQL, and SPSS. Proven track record of developing high-accuracy machine learning models supporting fraud detection and healthcare network analysis, translating complex data insights into actionable strategies to enhance product performance and service delivery. Passionate about harnessing data-driven insights to drive innovation and maximize value in public health, finance and startup environments.

Technical Skills

Programming Languages & Tools: Python (Pandas, NumPy, Seaborn, PySpark), SQL, SPSS
Machine Learning & Deep Learning: Scikit-learn, TensorFlow, Keras, PyTorch, Machine Learning Algorithms
Natural Language Processing (NLP): NLTK, SpaCy, Transformers (Hugging Face)
Data Visualization: Plotly, ggplot, Power BI, Matplotlib
Data Analysis & Statistical Modeling: statsmodels, Regression Modeling, Hypothesis Testing
Statistical Techniques: Descriptive & Inferential Statistics, Regression Analysis, ANOVA, Chi-Square Tests
Advanced Statistical Methods: Time Series Analysis, Factor Analysis, Bayesian Statistics
Data Collection & Experimental Design: Survey Design, Experimental Design, Reliability and Validity
Qualitative Research: Thematic Analysis, Interview Techniques
Data Handling: Data Cleaning, Dimensionality Reduction

Experience

Data Scientist and Operational Strategist | May 2022 – Present PaySii (FinTech Startup) | Bloomington, MN

- Designed and developed comprehensive dashboards on PowerBI, presenting daily and monthly performance reports to the board, enhancing data-driven decision-making at the executive level.
- Led cross-functional analytics integration, improving user satisfaction and retention.
- Collaborated with cross-functional teams, including product development and marketing, to integrate analytics findings into new app feature creation, boosting user satisfaction and retention rates.
- Conducted cohort analysis to evaluate customer retention and churn rates, utilizing Python and heatmaps. Applied behavioral analysis and clustering techniques for customer segmentation, enhancing targeted marketing strategies and improving retention by 25%.

Marketing Strategy Specialist| December 2022 – November 2023 GHA | Minneapolis, MN

- Provided strategic marketing insights and conducted advanced qualitative research to refine campaign strategies, significantly increasing donor engagement.
- Collaborated with medical teams to facilitate the adoption of new technologies and software, enhancing overall operational efficiency and staff competency.
- Designed impactful marketing materials that successfully generated over $200,000 in funds, substantially supporting the organization's humanitarian missions.
- Conducted a thorough audit of the branding elements, applying data-driven insights and research-backed strategies to improve content effectiveness and user engagement.

Research Assistant | September 2019 – July 2021
Cognitive Neuroscience Lab | City, University of London

- Worked closely with the research team to design and implement experiments that deepened our understanding of cognitive processes and their neural bases.
- Applied my expertise in SPSS and statistical analysis to interpret behavioral data, helping to drive new discoveries in cognitive neuroscience.
- Utilized Qualtrics effectively for survey design and data collection, ensuring robust and comprehensive data acquisition for our studies.
- Took charge of data cleansing to maintain the integrity and accuracy of our datasets, crucial for our research accuracy.

Projects

Credit Card Fraud Detection | January 2024

- Developed a high-accuracy machine learning model to detect fraudulent credit card transactions, achieving over 95% accuracy with a dataset representative of the Western United States.
- Implemented logistic regression and advanced ensemble techniques with cross-validation to address data imbalance, significantly enhancing model robustness and predictive accuracy.
- Performed extensive data preprocessing including feature engineering and selection techniques like one-hot encoding, standard scaling, improving model fidelity.
- Conducted in-depth exploratory data analysis (EDA) using Python (Pandas, Matplotlib, Seaborn) to guide the modeling approach and facilitate hypothesis formation on transactional behaviors.
- Utilized model interpretation techniques such as permutation importance and SHAP values to ensure transparency and explainability in fraud detection analysis.

Healthcare Networks for Stroke Prevention and Management | May 2024

- Constructed and analyzed a healthcare interaction network to optimize stroke prevention and management strategies, utilizing patient data focused on risk factors like hypertension and lifestyle habits, employing Python, NetworkX, and Gephi.
- Developed predictive models to assess stroke risk, integrating health and lifestyle factors with networkderived metrics using machine learning algorithms, improving understanding and prediction of stroke occurrences.
- Implemented advanced data preprocessing and transformation techniques including categorization of continuous variables, one-hot encoding, and data cleaning to ensure accurate feature representation and analysis readiness.
- Performed comprehensive network analysis using centrality metrics and community detection to identify key facilities and patient demographics, which could benefit from targeted healthcare interventions.
- Visualized complex network structures to highlight critical nodes and interaction patterns, facilitating clearer communication of data-driven insights to stakeholders.
- Conducted extensive exploratory data analysis (EDA) to uncover underlying trends and inform network modeling, utilizing Python libraries such as Pandas, Matplotlib, and Seaborn.
- Formulated policy recommendations based on network analysis findings to enhance healthcare provider strategies and public health policies aimed at stroke prevention and treatment.

Education/Certifications

Data Science Certification | Springboard | 2024
Mechanical Engineering, AS | Normandale Community College | Expected Graduation: 2024
Neuroscience & Psychology, BSc with Hons | City, University of London | 2021