J. Abigail Joseph
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EDUCATION

Florida Atlantic University | **B.S. in Data Science and Analytics** (2021-2025)

Florida International University | **Master of Public Health in Biostatistics** (2025-2027)

PROFESSIONAL EXPERIENCE

Biostatistics & Data Science Research Intern | 05/2024 - 06/ 2024

NIH-Funded Florida Summer Institute in Biostatistics and Data Science (SIBDS)

Technologies: SAS, R, RedCap

- Analyzed real-world clinical datasets to uncover health trends in infectious and chronic diseases using R & SAS.
- Built predictive models using logistic regression, survival analysis, and ANOVA to assess public health risk factors.
- Performed data cleaning to ensure accuracy and optimal quality for analysis and modeling.
- Engaged in career development workshops led by practicing biostatisticians and public health experts, strengthening industry knowledge and professional networking.
- Presented research findings, improving awareness of Social Determinants of Health (SDoH) impacts on health outcomes.

Technology Commercialization Intern | 08/ 2024 - 04/ 2025

Office of Technology Development (OTD), Florida Atlantic University

Technologies: Excel, ScaleIP

- Conducted market research using database technology to identify potential industry partners and assess commercialization opportunities for emerging technologies.
- Performed prior art searches to evaluate patentability and market value, contributing to preliminary commercialization assessments.
- Developed value propositions, integrating market insights with technical information to highlight the potential impact of new technologies.
- Drafted non-confidential marketing materials, translating complex technical concepts into clear, engaging content for stakeholders.
- Created social media content to promote new technologies, workshops, and OTD events, improving online engagement.
- Managed professional outreach communication, drafting emails to faculty inventors, event speakers, and industry partners to strengthen collaboration.

Research Intern – Digital Twin Simulation | 05/ 2023 - 05/ 2024

NSF Engineering Research Center – Center for Smart Streetscapes (CS3)

Technologies: Unity (C#), Cesium, Adobe Mixamo

- Developed a digital twin simulation of West Palm Beach using Unity, C#, AI models, and real 3D data to analyze pedestrian behavior.
- Designed AI-driven agent models for realistic pedestrian pathfinding, incorporating movement patterns and obstacle avoidance.
- Integrated real-time geographic data with Cesium for Unity, enhancing 3D urban mapping and simulation accuracy.
- Applied AI pathfinding algorithms for dynamic pedestrian navigation and collision avoidance.
- Presented research at the Florida Undergraduate Research Conference 2024 and National Conference for Undergraduate Research 2024, showcasing AI-driven urban analytics.

PROJECTS

Predicting Childbearing Likelihood (Logistic Regression) | GitHub

- Cleaned and processed data, reformatting variables into binary classifications and defining a target variable.
- Developed and refined models, iteratively adding predictors while evaluating model performance using AIC and VIF to reduce overfitting and multicollinearity.
- Achieved 80.7% accuracy and an AUC of 0.857, outperforming the baseline majority-class classifier (66.9%).
- Identified key predictors such as marital status (OR = 0.04), income (OR = 0.43), and sexual orientation (OR = 0.37), providing actionable demographic insights.
- Generated a case study for real-world interpretation of model predictions.

Tools & Techniques: R, RStudio, logistic regression, ROC/AUC analysis, hypothesis testing, data visualization

Australian Pine Classification (CNN & Environmental Data Analysis) | GitHub

- Implemented an AlexNet CNN model to classify invasive Australian pine trees, aiding conservation efforts and hurricane damage analysis.
- Generated heatmaps to visualize high-density areas, analyzing correlations between tree distribution and hurricane damage risk.
- Proposed object detection techniques for tree localization and frequency analysis in hurricane damage photos.
- Simulated long-term environmental impacts, evaluating the effects of Australian pines on beach erosion and wildlife disruption.

Tools & Techniques: Python (AlexNet), Data Visualization (Heatmaps), Object Detection Simulation

LINKS

LinkedIn: https://www.linkedin.com/in/j-abigail-joseph/

Github: https://github.com/jabigailjoseph