Julio Aira IV

786-295-8282 | jja5458@psu.edu | www.linkedin.com/in/julio-aira-iv-eit

WORK EXPERIENCE

Burns Engineering **Philadelphia, PA**

Mechanical Engineer *May 2022 - Present*

- Collaborated with cross-functional teams to identify and address potential mechanical design flaws in mechanical infrastructure systems, reducing rework by 15% and enhancing system efficiency.
- Designed innovative fluid mechanic systems for higher education buildings, resulting in a 20% decrease in energy consumption and saving the client $500,000 annually.

Ingersoll Rand **Ivyland, PA**

Mechanical Engineer *Jul 2021 - Jun 2022*

- Conducted extensive testing and research using finite-element analysis software, identifying and resolving structural weaknesses in mechanical systems, reducing failure rates by 30%.
- Implemented data-driven solutions to define an acceptable range for manufacturing processes with SQL, leading to a 15% reduction in production downtime and a 30% increase in overall efficiency.
- Developed and implemented a comprehensive training program on statistical process control (SPC) for the team, resulting in a 40% increase in understanding and application of SPC principles.

PROJECT EXPERIENCE

Pennsylvania State University University Park, PA

Football Play Classification Deep Learning Model

- Developed a deep learning model with Python to classify football plays as "Run" or "Pass" with high accuracy, leveraging pre-trained CNNs (ResNet18) and fine-tuning for optimal performance.
- Designed and implemented a data preprocessing pipeline to prepare image data for model training, including image resizing, normalization, and data augmentation techniques to prevent overfitting.

Pennsylvania State University University Park, PA

Next-Gen Restaurant Application Database Design

- Utilized Oracle SQL Developer to design physical database tables, optimizing performance and storage capacity by implementing indexing strategies that reduced query response time by 40%.
- Produced detailed Entity-Relationship Diagrams illustrating complex relationships within the database, leading to increased efficiency in data retrieval operations by 30%.

Pennsylvania State University University Park, PA

Resume Screening Tool

- Implemented and managed cloud infrastructure using AWS services for serverless compute and continuous deployment, ensuring high availability and reliability of the automated resume screening tool.
- Developed and integrated NLP algorithms using AWS Comprehend to extract and analyze key information from resumes, including skills, educational background, and professional experience, enhancing the efficiency and accuracy of the resume screening process.

EDUCATION

Pennsylvania State University **University Park, PA**

Master's of Science in Software Engineering *Graduation Date: Jul 2024*

SKILLS & INTERESTS

Skills: Python, R, SQL, AWS, NLP, PyTorch, Keras, Matplotlib, SciPy, Pandas, NumPy, Minitab, Git

Interests: Data Structures & Algorithms, Database Design, Software Testing, & Software Architecture