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 by using AutoCAD and Revit.
- Developed an automation application using Python to automate construction drawing setup with AutoCAD, reducing utilization by 75% and increasing productivity.

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

Resume Analysis Application for Prospective Candidates

- Developed a resume upload application using React and JavaScript to create a user-friendly interface for job applicants and HR personnel.
- Integrated Python and natural language processing techniques to analyze and rank resumes based on job descriptions, improving the efficiency of HR decision-making by 25%.
- Implemented git/GitHub for version control and CI/CD pipelines to ensure seamless integration and deployment, enhancing the development process.
- Deployed the application on AWS, ensuring high availability and scalability, and reducing infrastructure costs by 15%.

Software Requirements Specifications for Patient Monitoring System

- Implemented a comprehensive system for tracking and evaluating all requirements for the patient monitoring system using ReQtest, leading to a 30% increase in efficiency during the development process.
- Implemented a thorough review process for the SRS document, resulting in 100% accuracy of functional and non-functional requirements identified and documented.

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, improving model performance.
- Utilized ensemble methods to combine the predictions of multiple models, improving generalization and robustness, and achieving state-of-the-art performance on the play classification task.

EDUCATION

Pennsylvania State University **University Park, PA**

Master of Science in Software Engineering ***Aug 2022- Aug 2024***

Pennsylvania State University **University Park, PA**

Bachelor of Science in Mechanical and Biomedical Engineering ***Aug 2016- May 2021***

SKILLS & INTERESTS

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

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