Umar Sajjad

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4+ years of industrial experience in the development of workflow automation and optimization software using python, coupled with the implementation of several bespoke Machine Learning models on diverse datasets for various departments at National Aerospace Science and Technology Park, achieving substantial reduction in design and optimization cycle times.

SKILLS

Techincal Expertise: Machine Learning, Deep learning, Computer Vision, Data Analytics

Computer Skills: Python, SQL, C++, PyTorch, Keras, Microsoft Power BI, NumPy, Pandas, Matplotlib

WORK EXPERIENCE

National Aerospace Science & Technology Park • Islamabad, Pakistan · On-site

Machine Learning Engineer   Jun 2021 - Present

- Implemented the MachAero framework for Aerodynamic Optimization, using Docker to achieve a 25% reduction in optimization cycle time, achieving $100,000 cost savings within 7 months.
- Spearheaded a Multi-Disciplinary Design Optimization framework, seamlessly integrating machine learning, reducing design iteration time by 30% and increasing design accuracy by 25%
- Trained a Physics-Informed Neural Network on vast CFD data, leveraging Colab and Pytorch to enhance the predictive capabilities of CFD simulations, resulting in a 17% accuracy gain
- Developed a GA-based optimization framework using Python to identify the optimal airfoil cavity shape on turbine blades, Increased the turbine's power output by 23%
- Instructed a cohort of 20 colleagues in Python programming, fostering a collaborative learning environment and contributing to the team's enhanced technical proficiency

Junior Machine Learning Engineer   Nov 2020 - Jun 2021

- Deployed a Gaussian Process Regression model on high-fidelity data using Python to reduce dependency on CFD simulations, achieving cost savings of upwards of $300,000 in 8 months
- Streamlined the design and analysis processes of Aerodynamics Lab by developing an automation framework utilizing Python, resulting in a 40% reduction in overall processing time

EDUCATION

Master of Engineering in Mechanical Engineering

Illinois Institute of Technology   Aug 2017 - May 2019

Bachelor of Science in Mechatronics and Automation Engineering

National University of Sciences and Technology (NUST)   Sep 2012 - Jun 2016

CERTIFICATIONS

Data Science and Machine Learning   May 2024

Knowledge & Human Development Authority - Government of Dubai

Certified Data Science, Data Analytics, and Machine Learning Professional   May 2024

IMMERSIVE BUSINESS TRAINING DMCC - Dubai