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Accomplished optimization and analytics professional and leader with a decade of experience utilizing optimization, data science, and advanced analytics to transform complex datasets into actionable insights for operational decision-making

EXPERIENCE

SOUTHWEST AIRLINES | SENIOR AI CONSULTANT, AI & DATA TRANSFORMATION

Sep 2024 – Current | Dallas, TX

- Leading complex data science, machine learning, artificial intelligence, and optimization projects, ensuring high-impact results and innovation
- Developing and executing strategies for deploying and monitoring machine learning models, with a focus on accuracy and performance

AMERICAN AIRLINES | MANAGER, SAFETY DATA SCIENCE

Apr 2022 – Jul 2024 | Fort Worth, TX

- Led a cross-functional team of data scientists, data engineers, and data analysts to innovate safety data analysis, extracting previously unexplored insights in safety data and advancing safety in the digital age
- Utilized cutting-edge machine learning technologies and techniques such as natural language processing, large language models, and predictive modeling to derive actionable outcomes from safety data
- Designed and implemented dashboards, reporting, data models, and statistical analyses that deliver actionable, data-driven findings, enabling measurement and assessment of safety initiatives and KPIs
- Established a cohesive data strategy to integrate and unify safety data sources, enhancing data accessibility across safety and business units for informed decision-making

AMERICAN AIRLINES | SENIOR CONSULTANT, OPERATIONS RESEARCH & ADVANCED ANALYTICS

Feb 2015 – Apr 2022 | Fort Worth, TX

- Engineered and deployed a machine learning model to predict aircraft turn times, doubling departure time accuracy compared to previous methods
- Developed an automated pipeline using Microsoft Forms, Azure Logic Apps, and Azure Databricks to process Flight Training and Standards data, providing real-time feedback to instructors
- Contributed to workload simulation models for flight dispatchers and load planners, enabling what-if scenario analyses for workforce planning and resource budgeting
- Formulated and developed the optimization engine for the Pilot Daily Open Time Coverage / Reserve Assignment System, optimizing pilot preferences while meeting required contractual obligations to maximize open sequence coverage
- Created a data model and live dashboard integrating operational, revenue management, and cargo data to provide critical insights into current and future flight operations, aiding tactical cancellation decisions
- Engineered a heuristic-based optimization model for assigning pilots and instructors to simulators, enhancing efficiency in recurrent training

PURDUE UNIVERSITY | GRADUATE RESEARCH ASSISTANT, AERONAUTICS AND ASTRONAUTICS

Aug 2007 – Jan 2015 | West Lafayette, IN

- Developed the Fleet Level Environment Evaluation Tool (FLEET) to assess the impact of future aircraft on fleet-level emissions, utilizing a mixed integer linear programming formulation based on resource allocation and fleet assignment

EDUCATION

PURDUE UNIVERSITY

DOCTOR OF PHILOSOPHY (ABD)

AERONAUTICS AND ASTRONAUTICS

May 2010 – Jan 2015 (Incomplete / ABD)

MASTER OF SCIENCE

INDUSTRIAL ENGINEERING

May 2010 – May 2013

MASTER OF SCIENCE

AERONAUTICS AND ASTRONAUTICS

Aug 2007 – May 2010

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

BACHELOR OF SCIENCE

AEROSPACE ENGINEERING WITH

INFORMATION TECHNOLOGY

Sep 2003 – Jun 2007

BACHELOR OF SCIENCE

MANAGEMENT SCIENCE

Sep 2003 – Jun 2007

SKILLS

PROGRAMMING

Proficient:

Python • SQL • Java

Experienced:

SAS • MATLAB • L^AT_EX

Familiar:

R • HTML • JavaScript

TOOLS / PLATFORMS

Azure • Azure ML • Tableau • Databricks • FICO Xpress • Gurobi Optimizer • Snowflake • Cognos Analytics • Alteryx • Power BI • Microsoft Office