Tanveer Alam

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Highly analytical and detail-oriented professional seeking a Data scientist position to utilize strong mathematical background, programming skills, and statistical knowledge offering experience in interpreting and analyzing data. Proficient in various data models, machine learning algorithms, and advanced data mining techniques.

Experience

Machine Leaning Techniques for Understanding Hard Landing

09/2021-04/2022

Objective: *To predict hard landings of aircrafts using ML models and identify features which increases the risk of hard landing.*

- Extracted QAR (Quick Access Recorder) data NASA Dashlink website which hosts 2.5 years QAR data of a 35-tail fleet of regional business aircraft.
- Converted QAR data from matlab format to CSV format for each flight.
- Explored the data by exploratory data visualization for each sensor output for couple of flights.
- Extracted and cleaned data around touchdown time and consolidated in one CSV file.
- Plotted the effect of each sensor on vertical acceleration which is considered for hard landing classification.
- Selected features after brainstorming with team and SME.
- Selected usable ML model based on the data distribution and after suggestion from SME.
- Predicted hard landing for flights using Linear SVC.
- Using feature importance and feature weights, identified the features which increased the risk of hard landing
- Future prospects: These findings can help training and flight operation departments minimize hard landings by focusing on primary risk drivers.
  Build a ML model for predicting runway overrun by aircrafts using QAR data.

Touchdown Point Modelling 02/2023

Objective: *To build a better touchdown model and help Boeing monitor and address runway overrun risk on a global scale*

- Explored the adsb train and test data provided by safety team.
- Extracted and cleaned the dataset for visualization.
- Performed exploratory data analysis on the dataset using various plots and charts.
- Plotted effects of each features against the touchdown point.
- Selected the usable ML model based on the lowest RMSE score.

Skills

Hard Skills:

- Data Analysis
- Reporting
- Exploratory Data Analysis
- Model Development

Techniques:

- Predictive Modelling & Analysis
- Statistical Modelling
- Clustering & Classification
- Data Visualization
- Feature Selection

Tools:

- Git
- Apache Spark, Spark SQL
- Apache Hadoop
- Hive
- MongoDB

AWS Cloud Services:

- EC2, EMR, S3

Programming Languages:

- Python
- R
- SQL

Education

Master of Science in Data Science
University of Arizona
Sep '22 – Sep '24 (Expected)

Certification

- Machine Learning Certification
  - Coursera

PROFESSIONAL EXPERIENCE

Boeing India Pvt. Ltd., Chennai, India
Structure & Payload Design Engineer **06/2017 - Present**

- Led the team for 777X non-recurring product development and maintained the deliverables with laudable quality.
- While leading the team, reduced the defect density from 2.0 to <0.5, increased first time quality to 95% and maintained on time delivery to 100%.
- Conceptualized and developed secondary structures for outboard of Boeing 777X-9 and 777X-8 to meet the loading requirement from stowbin group.
- Concept design of intermediate fittings (metallic, sheet metal & composite) to support stowbin.
- Development of design concepts for solving imminent challenges implementing any engineering changes (ECR).
- Created ICM (Interface Control Model) & RLM (Relational Layout Model) for secondary structure of Boeing 777X-8.
- Optimized metallic intermediate fittings' design to chopped fiber composite fitting as per design for manufacturing & assembly criterions and stress analysis reports. This resulted in ~40% weight saving.
- Reverse engineered single sourced parts to Boeing Design methodology by collaborating with ME, teardown lab, BMT & suppliers for manufacturability.
- Performed tolerance stack-up analysis to validate part dimensions, datum schemes, designed gaps, and proper assembly.
- Designed gear mechanism for Boeing 747 door latch assembly by referring design guidelines from American Gear Manufacturing Association (AGMA) and ANSI standards.
- Model based design for required detail and assemblies in CATIA V5 FT&A (Functional Tolerancing & Annotation).
- Collaborated with multidisciplinary engineering teams to design structural modifications of aircraft and systems.
- Member of Boeing quality checker signoff team & quality assurance. Responsible for reviewing the assigned datasets before all stakeholders' signoffs.

Cyient Ltd., Hyderabad, India
Senior Design Engineer **07/2013 – 05/2017**

- Mentored and led a team of 6 members for flight test design build of Boeing 737Max-7 for 6 months.
- Delivered 8 packages in 4 months while leading with 100% on time delivery, 100% first time quality.
- Created flight test design build for Boeing 787-10, 737Max-9 & 737Max-7 with on time delivery 100% FTQ & FTQ.
- Conceptualized and developed the test equipment support parts to accommodate the testing equipment based on the flight test requirement.
- Presented the design (modified or new) through preliminary/critical design review.
- Collaborated with ME, stress team and production engineers for the surrounding structure confirmation and design validation.
- Generated drawings or MBD, Part List and released the package in ENOVIA by taking the signatures of all the stakeholders.