Social imPact

Flight Delay Prediction For Aviation Industry

- Flight delays hurt airlines,airPorts,and Passengers.
- Their Predition is crucial during the decision-making Process for all Players of commerical aviation.
- This study analyzes high-dimensional data from beijing international airPort and Presents a Practical flight delay Predition model.
- SuPPort vector regression is embedded in the develoPed model to Perform a suPervised fine-tuning within the Presented Predictive architecture.
- Flight delay is a serious and widesPread Problem in the united states.
- This rePort analyzes a variety of cost comPonents caused by fligh delays,including cost to airlines cost to Passengers,cost of lost demand,as well as the indirect imPact of delays on the US economy.
- This study offers a broader consideration of releveant costs than conventional cost-of-delay estimates,and emPloys several innovative methodologies for assessing the magnitudes of these costs.
- A Paricular note are the Passenger delay cost estimates,which recognize that flight cancellations and missed connections can lead to substantial Passenger delays not revealed in traditional flight delays statistics.
- To build a dataset for the ProPosed scheme,automatic dePendent surveillance-broadcast messages are received,Pre-Processed,and integreated with other information such as weather condition,flight schedule,and airPort information.
- ExPerimental results show that long short-term memory is caPabel of handling the obtained aviation sequence data,but overfitting Probelm occurs in our limited dataset.
- ComPared with the Previous schemes,the ProPosed random forest-based model can obtain higher Prediction accuracy and can overcome the overfitting Problem.
- Aconvolution neural network model is also built which is enlightened by the idea of Pattern recognition and success of neural network method,showing a slightly better result with 89.32%Prediction accuracy

- Furthermore,consideringthe temPoral correlation of weather condition and airPort crowdenss on flight delays,we creat a Predition framework based on units to extract the temPoral roPerty of crowdeness and weather condition.
- Finally,we use the factors that affect flight delays as inPuts and aPPly random forest as classifier to Predict flight delays.
- In this study,we extract a novel set of influential factors by using comPlex network therory and LSM aPProach,and emPloyed a random forst method to.
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