

The paper titled "Predicting Time to Pushback of Flights in U.S. Airports" by Daniil Filienko, Yudong Lin, Kyler Robison, Trevor Tomlin, and Martine De Cock, focuses on the development of a machine learning model to predict the pushback time of flights². The pushback time refers to the moment at which a departing aircraft is pushed back from its parking position at the gate². Accurate predictions of pushback time can yield more accurate predictions of flight takeoff time².

The model was designed and trained in response to the 2023 "Pushback to the Future" competition hosted by NASA². The model is a gradient boosting decision tree model trained on a rich feature set encompassing data about weather, airport activity, airline, and aircraft characteristics².

In evaluating their approach on a large dataset with data from 10 U.S. airports, the authors found that training one local model for each airport is more memory efficient, while yielding a mean absolute error at par with a global model trained over the data of all airports combined². Their approach was among the winners of the 2023 "Pushback to the Future" competition².

Source: Conversation with Copilot, 5/24/2024

- (1) Predicting Time to Pushback of Flights in U.S. Airports - kdd.org.
<https://www.kdd.org/kdd2023/wp-content/uploads/2023/08/filienko2023predicting.pdf>.
- (2) KDD '23: Proceedings of the 29th ACM SIGKDD Conference on Knowledge
<https://www.kdd.org/kdd2023/wp-content/uploads/2023/08/toc.html>.
- (3) Sensor Placement for Learning on Networks - kdd.org.
<https://www.kdd.org/kdd2023/wp-content/uploads/2023/08/burudgunte2023sensor.pdf>.
- (4) undefined. <https://doi.org/XXXXXXX.XXXXXXX>.