



PATHFINDER

Use machine learning to propose viable flight paths

To improve the routes offered to customers such that they can be used directly without further tuning by the Airline Operator

INITIAL OBJECTIVE

The current pathfinder proposes the right routes to Airlines after fine-tuning with an approximately 30% efficiency. The objective of the project was to beat that score and improve proposals using machine learning technologies on existing historical data.

INITIAL RESULTS

Both technologies showed considerable improvement of the current pathfinder efficiency with a slight advantage for the Random first and a high potential of combination of both of them.

TRANSFORM

- Users in the loop and business value consideration
- Safety & security consideration
- Time to market focus
- Velocity from need/idea to operation

FRAME

1. Use cases identification / User req. understanding
2. Data explored and first cleaning activity
3. 6 machine learning models explored and 2 selected

CREATE

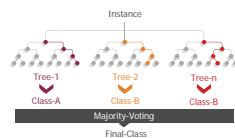
- Demonstrator
- Machine learning Algo configuration
- Data transformation & standardisation

CONVINCE/DECIDE

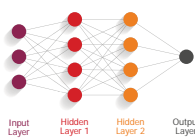
- Present & demonstrate
- Prepare for industrialisation
- Share results with users
- Collect feedback

USED TECHNIQUES

Tuned random Forest



Tuned Neural Network



Tuned of flight paths on a portion of European sky



RESULTS AND BENEFITS

For EUROCONTROL

- Optimize the use of airspace while meeting the demand
- Skills Improvement of operators on new technologies
- Automation enhancement within the NM Function

For Airline Operators

- Routes can be used directly, without further tuning by Airline Operators
- Efficiency and Financial gains
- 60% Improvement of the proposed routes against rejected ones from Airlines Operators

WHAT'S NEXT ?

- Disseminate, Demonstrate and Show within NM lab
- Industrialisation
- Optimize other tools by capitalizing on the datasets tuned for pathfinder

www.soprasteria.com – blog.soprasteria.com

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founding members

