Daniel Delahaye - AI for Air Traffic Management and Large Scale

The first objective of this chair is to develop new AI decision support tools for assisting air traffic management operators, mainly air traffic controllers and pilots, in order to enhance their efficiency and to increase the overall capacity of the air traffic system. The chair has proposed a very efficient algorithm which can propose in real time an emergency landing trajectory to assist pilots in case of critical situation like for the Hudson case where both engines have been lost due to a bird strike. The chair has also developed new ML approaches to detect abnormal behavior of landing trajectories mainly in terms of energy management in order to warn controllers about such behaviors.

In this framework the chair addresses also robustness issues link to ML algorithms used in such applications.Some other works are currently initiated in the chair : Large scale trajectory planning,Optimization for Arrival Management, AI Decision Support Tool for airlines dispatchers in case of disruption (SOPRA) , Collective perception for smart ground mobility (NXP), RL for Auto-Pilot software verification (ISAE ENAC AIRBUS), Contrail efficient trajectory design at aircraft level (AIRBUS UPM DLR) and at airways network level (Reims ACC, ONERA, NASA), Minimal Noise abatement helicopter approach (AIRBUS, ENAC, MIT). GNSS applications.

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