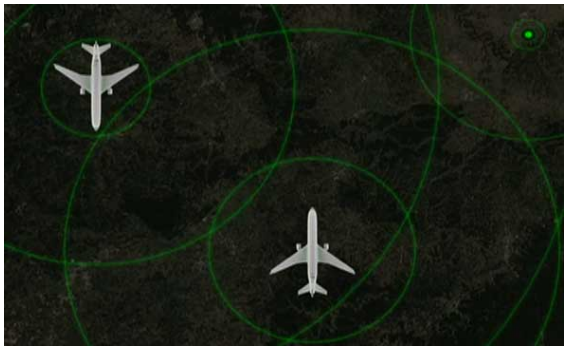
ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Distributed Computing

Prof. R. Wattenhofer

Receiving Aircraft Messages with Deep Learning



Aircraft nowadays determine their position using satellite navigation and automatically broadcast it over a protocol called ADS-B. These messages can be received on the ground and by other aircraft and will soon replace secondary surveillance radar. This has several benefits, including higher received signal strength on the ground, increasing for instance the data quality for air traffic control. There exist open-source receivers to detect these messages. But in previous projects we observed that not all aircraft send the messages exactly the same way and according to the standard. Additionally, there is no coordination for the send times and messages often collide.

In this project, we want to explore possibilities for detecting these messages more reliably using deep learning. In a previous project we showed that we can already outperform the open-source receiver, but we still have many ideas how to improve our receiver. For example, we want to take advantage of the characteristics of different aircraft.

Requirements: Knowledge of signal processing and machine learning and creativity are advantageous. The student(s) should be able to work independently on this topic!

Interested? Please contact us for more details!

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