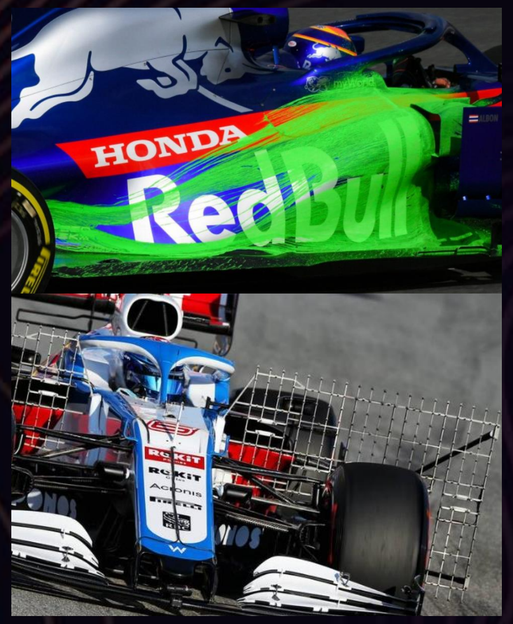
KEY PROBLEM

Accurately assessing the **aerodynamic performance** in the **real-world** is a **massive challenge**. In F1, the **harsh and variable conditions** only exaggerated this. Getting this wrong can be the **difference between winning and losing a championship**. For Mercedes, this is **$30M in prize money** but the **prestige of winning** is estimated at **$120B**

CURRENT METHODS



- Flow-vis Paint – Gives a great visualisation of the average flow. It's difficult to accurately evaluate and what can be learnt from this method is limited
- Aero Rakes – Large structures containing hundreds of additional sensors to directly measure the air flow. They're heavy, can't be used during a race and change the air flow. This limits the teams insight to practice sessions only

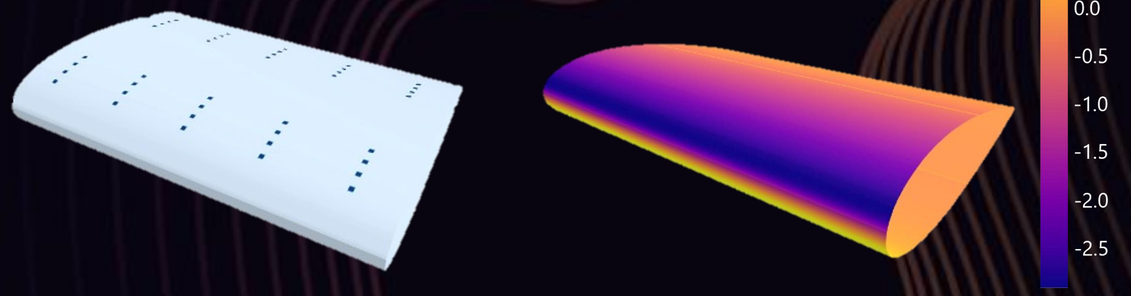
AMRSS

FLOW ON THE FLY

OUR SOLUTION

Combining AI with existing simulation data, our model learns the **key aerodynamic trends**. These trends are combined with the inputs from the sensors to give a **complete**, **real-time insight**. Whilst being **non-intrusive** and **minimising the sensors required** to **enable better decision-making** in the **critical moments**

Sensors on wing surface → Full aerodynamic reconstruction



WIDER MARKETS

The technology created here has direct applications in: **Automotive** for improving EV range estimation, **Aerospace** to improve control systems, **Renewables** to optimise performance and improving safety

University of Southampton
Christian Toma
christoma14@gmail.com