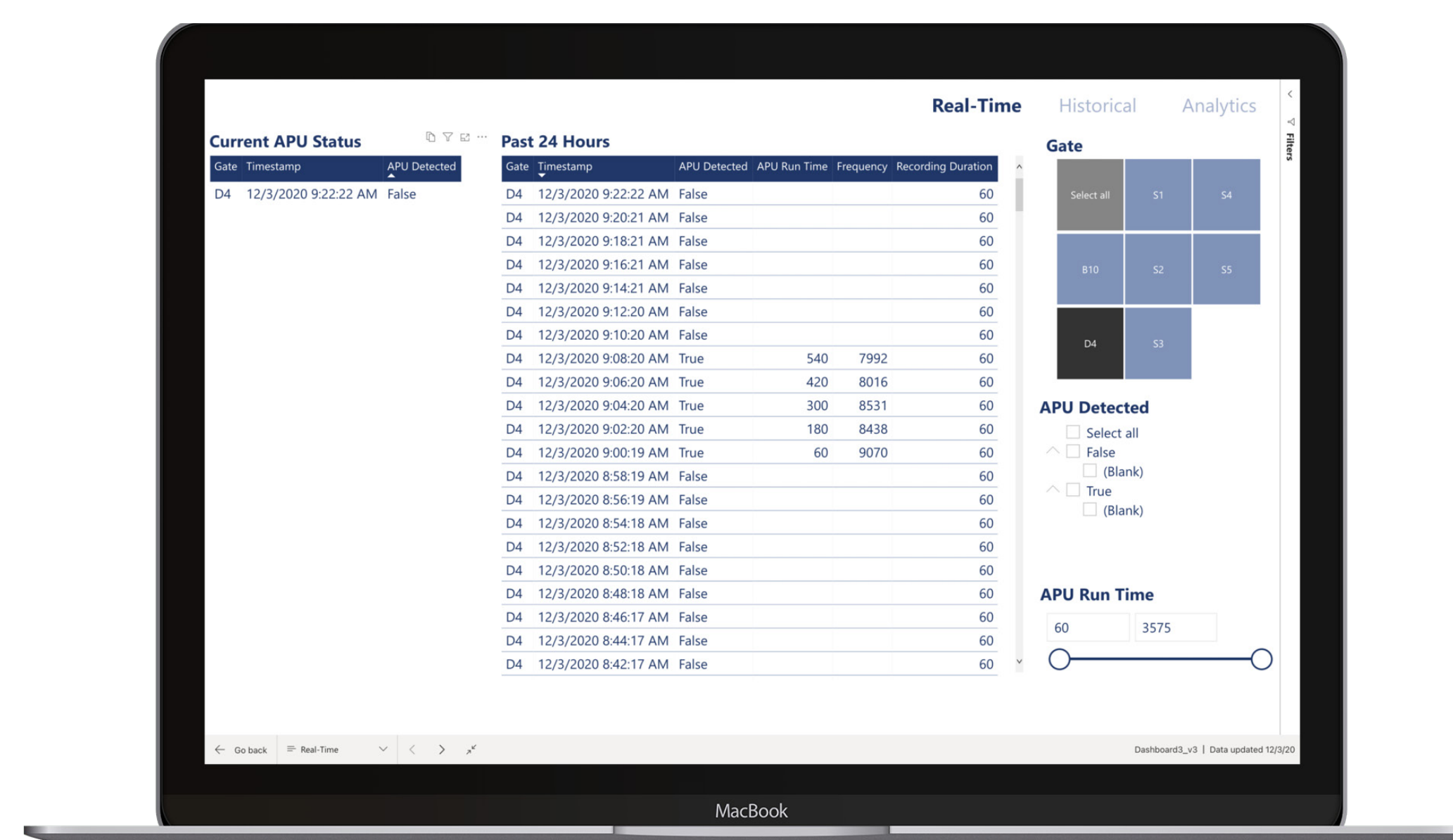


APU Monitoring System

Reduce aircraft emissions through the power of AI.
 Decrease air pollutants by 27,000 lb and cut fuel costs by \$630,000 per year.
 Capture and gain insights from previously inaccessible data streams.

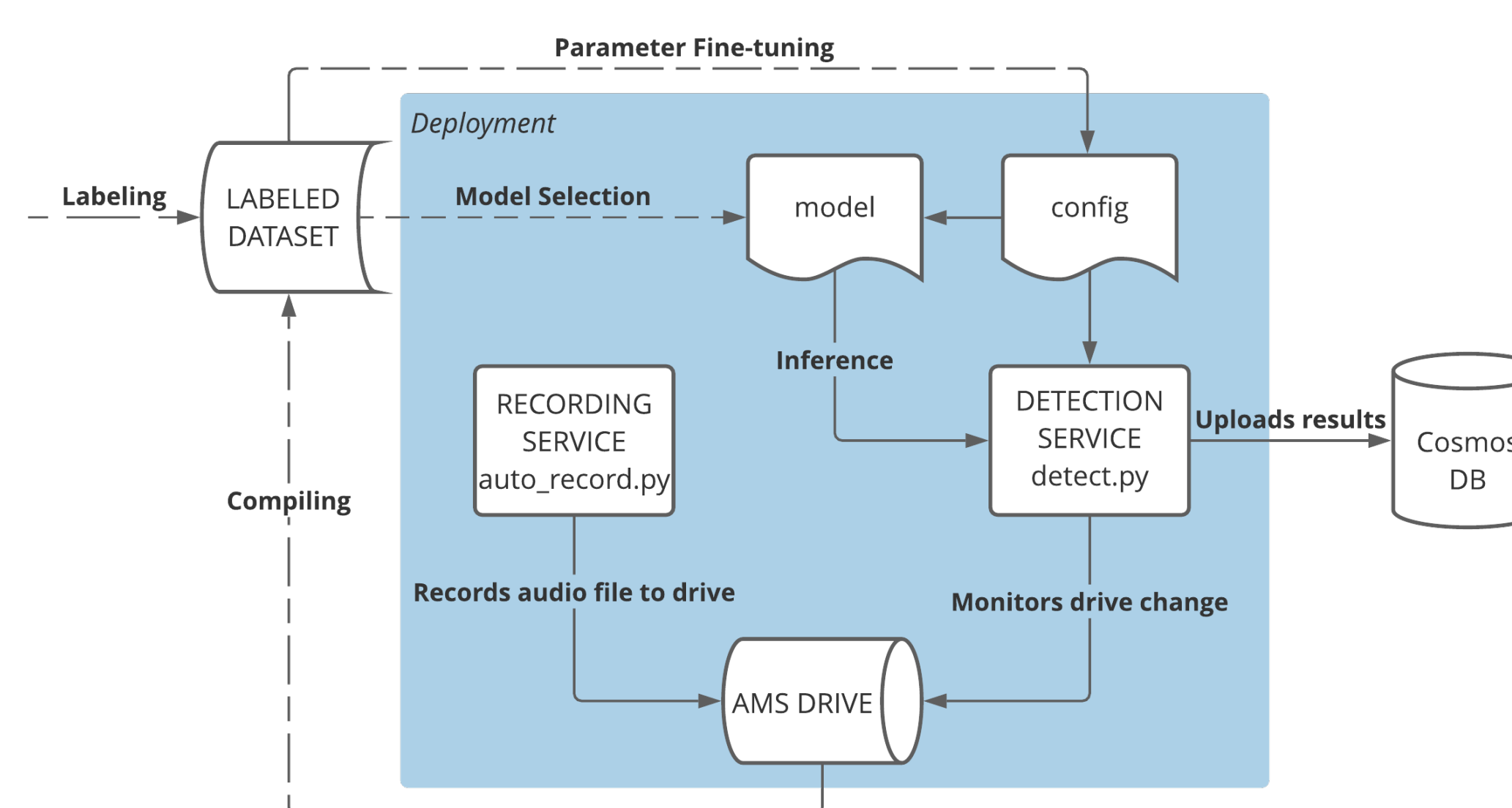
Problem

All commercial jets use an Auxillary Power Unit or APU to provide power and preconditioned air to the plane when parked at the gate. APUs are necessary for the function of jets, but they aren't needed when greener sources of energy are available. Many metropolitan airports provide their own pre-conditioned air and power to docked planes; but for a variety of reasons, pilots and mechanics might still choose to use an APU over these greener sources. There are currently no systems in place that accurately monitor and regulate the usage of APUs at airport gates, leading to excess pollution in our environment and wasted jet fuel for airlines.



Solution

In efforts to create a healthier planet, SeaTac airport is implementing rules for airplanes to reduce APU usage for jets at the gate based on pre-determined policy requirements. In partnership with Microsoft's AI for Earth initiative, we've developed a system which automatically monitors APU usage in real-time, providing operational insights into a previously inaccessible data stream, and enabling enforcement of upcoming environmental regulations. Through our edge device's sensors using machine learning and utilizing multiple data streams, we are able to accurately determine APU usage 90% of the time, and provide users the ability to gain insights on every instance of



The system consists of two parts. The recording service captures and stores the microphone audio. Then the detection service uses pre-trained model to do inference and uploads results to the database.



APU detection device installed at gate B10. All data is fed through our backend and displayed on our dashboard in real time

Process/Approach

