



PROFESSIONAL CLOUD ARCHITECT

# Helicopter Racing League

## Company overview

Helicopter Racing League (HRL) is a global sports league for competitive helicopter racing. Each year HRL holds the world championship and several regional league competitions where teams compete to earn a spot in the world championship. HRL offers a paid service to stream the races all over the world with live telemetry and predictions throughout each race.

## Solution concept

HRL wants to migrate their existing service to a new platform to expand their use of managed AI and ML services to facilitate race predictions. Additionally, as new fans engage with the sport, particularly in emerging regions, they want to move the serving of their content, both real-time and recorded, closer to their users.

## Existing technical environment

HRL is a public cloud-first company; the core of their mission-critical applications runs on their current public cloud provider. Video recording and editing is performed at the race tracks, and the content is encoded and transcoded, where needed, in the cloud.

Enterprise-grade connectivity and local compute is provided by truck-mounted mobile data centers. Their race prediction services are hosted exclusively on their existing public cloud provider. Their existing technical environment is as follows:

- Existing content is stored in an object storage service on their existing public cloud provider.
- Video encoding and transcoding is performed on VMs created for each job.
- Race predictions are performed using TensorFlow running on VMs in the current public cloud provider.

## Business requirements

HRL's owners want to expand their predictive capabilities and reduce latency for their viewers in emerging markets. Their requirements are:

- Support ability to expose the predictive models to partners.
- Increase predictive capabilities during and before races:
  - Race results
  - Mechanical failures
  - Crowd sentiment
- Increase telemetry and create additional insights.
- Measure fan engagement with new predictions.
- Enhance global availability and quality of the broadcasts.
- Increase the number of concurrent viewers.

- Minimize operational complexity.
- Ensure compliance with regulations.
- Create a merchandising revenue stream.

## Technical requirements

- Maintain or increase prediction throughput and accuracy.
- Reduce viewer latency.
- Increase transcoding performance.
- Create real-time analytics of viewer consumption patterns and engagement.
- Create a data mart to enable processing of large volumes of race data.

## Executive statement

Our CEO, S. Hawke, wants to bring high-adrenaline racing to fans all around the world. We listen to our fans, and they want enhanced video streams that include predictions of events within the race (e.g., overtaking). Our current platform allows us to predict race outcomes but lacks the facility to support real-time predictions during races and the capacity to process season-long results.