



Sport Hackdays 2022 – Vorn Challenge 1

Challenge Description

OBJECTIVIZING MOVEMENTS AND ENGAGING FANS IN FREESTYLE SKIING

Freestyle is a fascinating young extreme sport. During competitions athletes jump over high aerials and do numerous tricks in their air time – which is just a few seconds. For viewers or judges it might be hard to detect what exactly happened in this short amount of time.

The idea is to close this gap with sensor data. The information generated during the jump should be made visible in a virtual dummy. This dummy can replicate the movements of the actual jump and make it more comprehensible.

For the challenge, movement data generated in a trampoline studio should be visualized by a virtual 3D dummy with python. Further, the goal is to visualize additional information to support a potential judge or a fan to better understand what has happened, such as g-forces.

Challenge Owner

[VORN](#) is a Swiss high-tech company based in Wollerau Switzerland. They incorporated wearable sensors to gather movement data.

Their wearable includes five sensors. The five sensors not only allow to detect your orientation; they can also measure motion, altitude, and temperature.

VORN has already been part in the HSLU Sports Hackdays in 2021. Now we can take their vision even further with the challenge in 2022.

Data

The data used for the challenge is generated in a trampoline park. 5 sensors, located at each foot and hand as well as the core, measured the movements. Each of those sensors measured the rotation, temperature, acceleration and ECG. The datasets are provided with videos of the jumps and the correlating timestamps.

