# Horse Analytics

HorseAnalytics builds a first-class solution for equestrian sports to deliver unique training experiences.



## About the client

HorseAnalytics is a German early stage startup with seed funding. The vision of HorseAnalytics is to accompany horses at all times and to improve their well-being and their health by using mobile apps, sensors and integrated data analysis.

## The challenge

The product owner came to us with an idea to monitor horse activity 24/7 including exercise, sleep and behavior and to translate all of this into meaningful data for the user.

We realized that the cornerstone of this project would be a Machine Learning algorithm that detects various horse activities. With this in mind, we designed the proper solution architecture and suggested a plan of action that will help ensure a successful delivery.

## Delivered value

The client expected us to take a major responsibility for delivering the whole end-to-end technical solution, which also included business analysis, architecture design, mobile apps and cloud development, as well as building the information model, collection and processing of raw data, and neural network training.

After one year, when the system was ready and we released our first apps, we were happy to see all the positive feedback that the real users have been sharing with the HorseAnalytics team.

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# The process

Together with the product owner, we decided to start with a lean development approach. So instead of jumping straight into hardware development, we decided to build an emulator app first. This app would run on regular mobile phones located on the horse and collect movement data.

From here, we started getting a real taste of what data science really is in practice, including things like which data to collect and which data should be considered as noise, how to store it and in which format, etc. Obviously, raw data collection and processing is the most critical phase when you are about to build your own neural network.

For the emulator app, we decided to collect data on Google Firebase, which ideally suited our initial requirements. To ensure we were collecting the right data of the horse movements, we decided to build a voice assistant that would talk to the horse rider via an earpiece and dictate which exercise they have to perform next. Meanwhile, we have been busy implementing the UI elements for the mobile app and ensuring sleek UX design.

Moving forward, we set up a cloud environment on MS Azure IoT to improve our data storage and streamline the work of our neural network. When the first app was launched, it could detect 4 main horse activities: standing, walking, trotting and galloping.

In the next releases, we focused on polishing our machine learning algorithm and adding new app features. It's interesting to mention the unique QA testing process on this project that brought our office employees closer to these noble animals out in the field.

**Services**

UI/UX
Mobile app development
Back-end and API development
Data science

**Technologies**

iOS SDK
Android SDK
Microsoft Azure
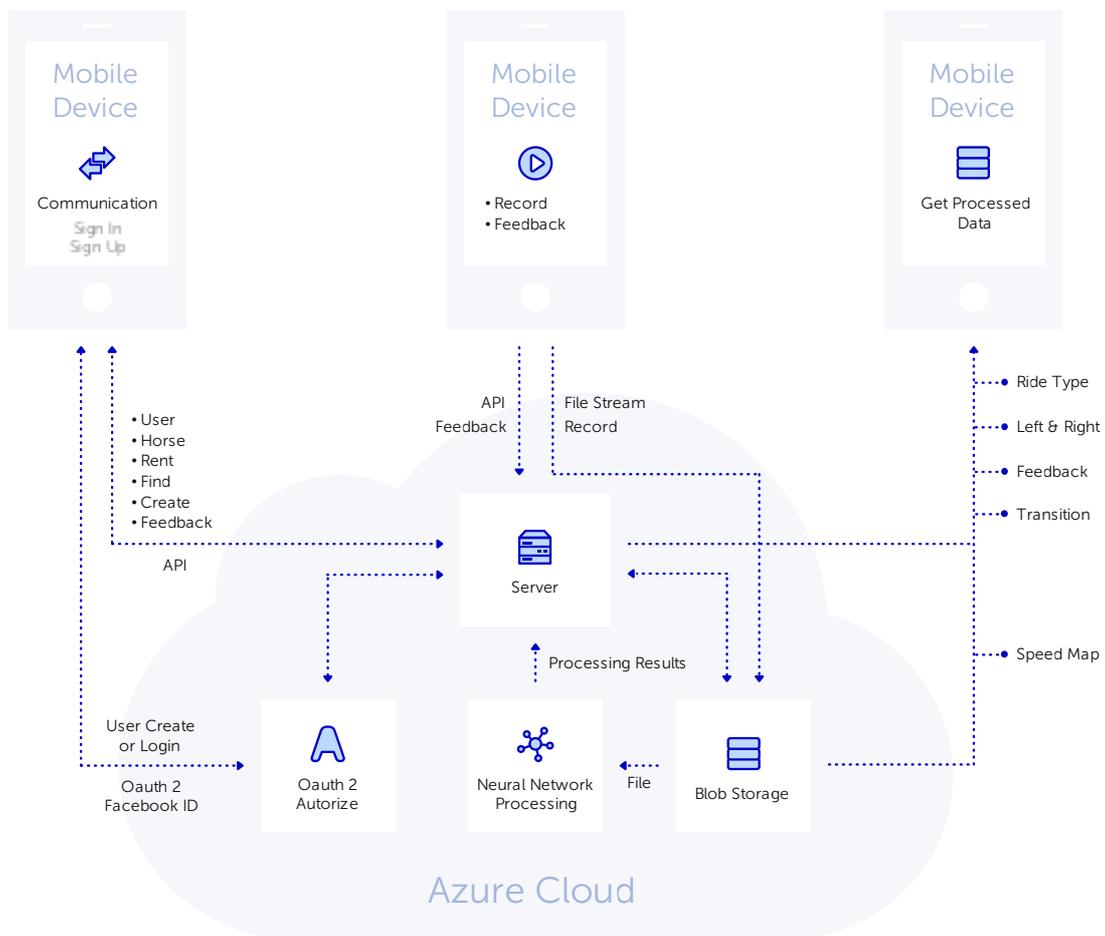Azure Machine Learning
ASP.NET
Azure BlobStorage
REST API

**Industry**

Sport Tech

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# How it works



**Mobile Device**

Communication

Sign In
Sign Up

**Mobile Device**

• Record
• Feedback

**Mobile Device**

Get Processed Data

• User
• Horse
• Rent
• Find
• Create
• Feedback

API

API
Feedback

File Stream
Record

Ride Type

Left & Right

Feedback

Transition

Server

Processing Results

Speed Map

User Create
or Login

Oauth 2
Facebook ID

Oauth 2
Autorize

Neural Network
Processing

File

Blob Storage

Azure Cloud

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# About Lemberg Solutions

Lemberg is a technology consulting, software & hardware engineering company. Startups and established businesses rely on our industry expertise to build new products and deliver digital transformation.

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