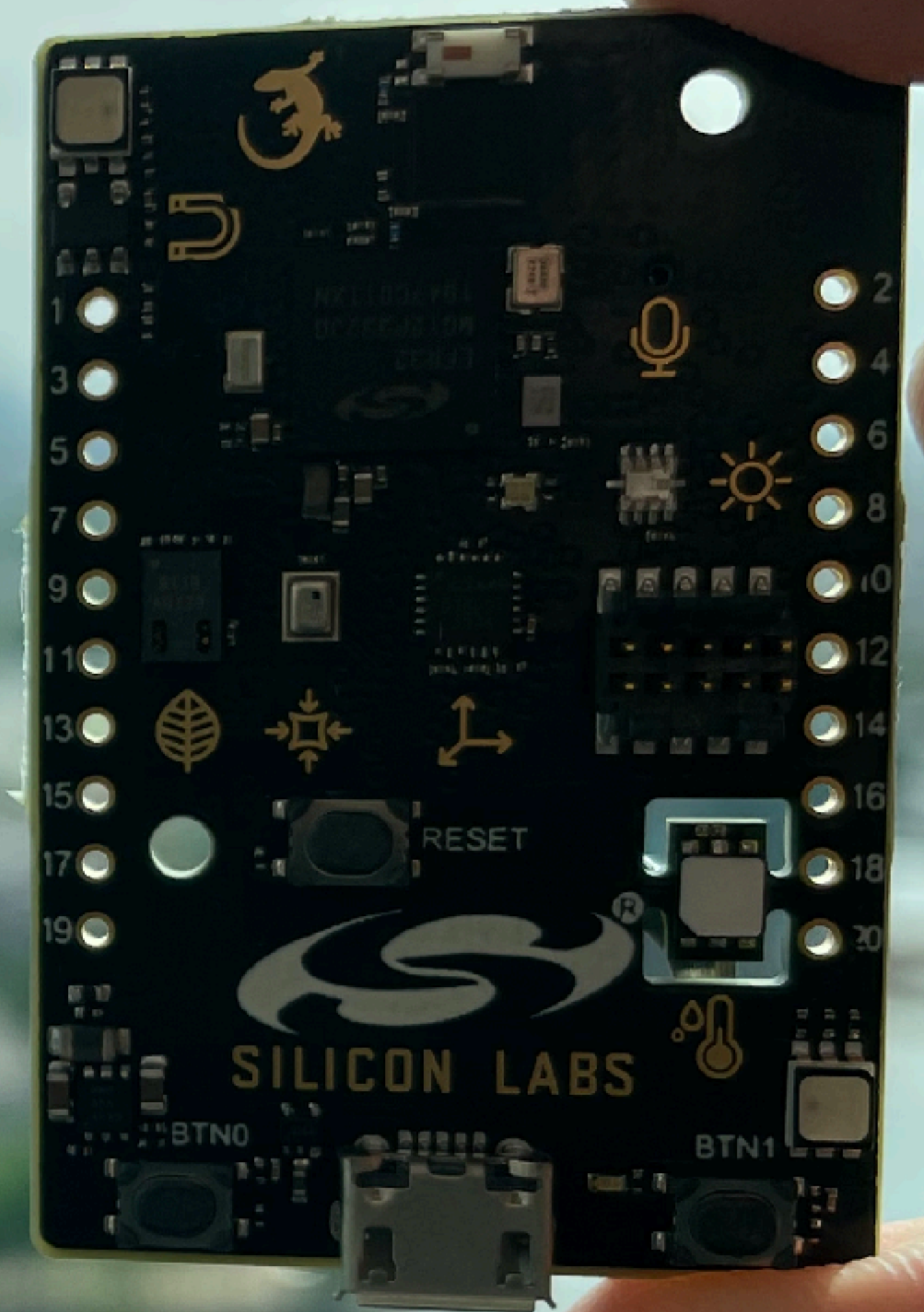


# Give your hardware **brains and ears**

**Jan Jongboom**  
September 2021





# Edge Impulse

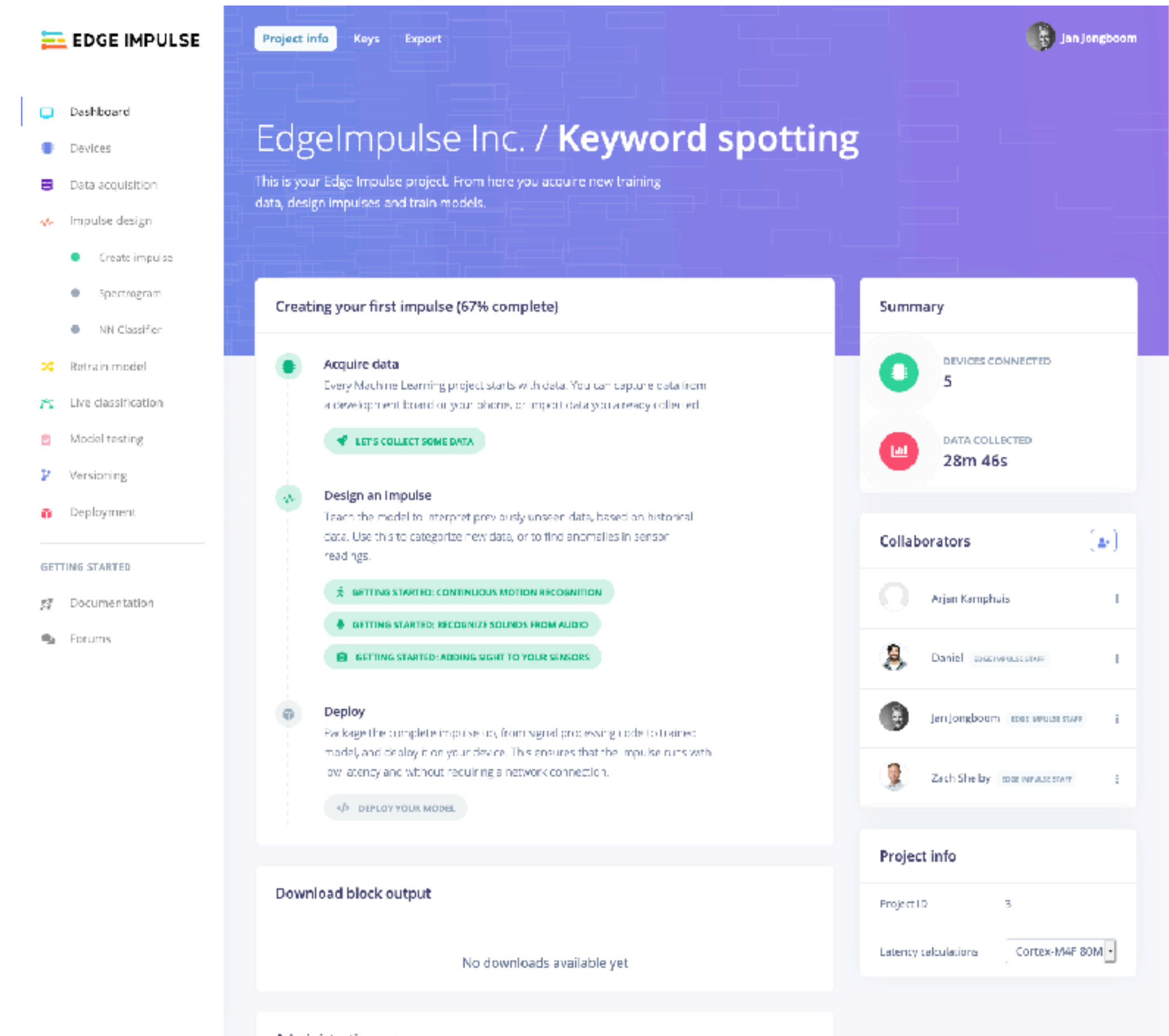
The place to build embedded Machine Learning models

From engineers (not data scientists!) for engineers

Every step of the way, from data collection to deployment

Already >35,000 real ML projects created!

Free for developers: [edgeimpulse.com](https://edgeimpulse.com)



# Some things are easy...



↓ -10°C





# Some things are MUCH harder



# But... this is where the interesting part is

Infinite sounds, images, motions all around us

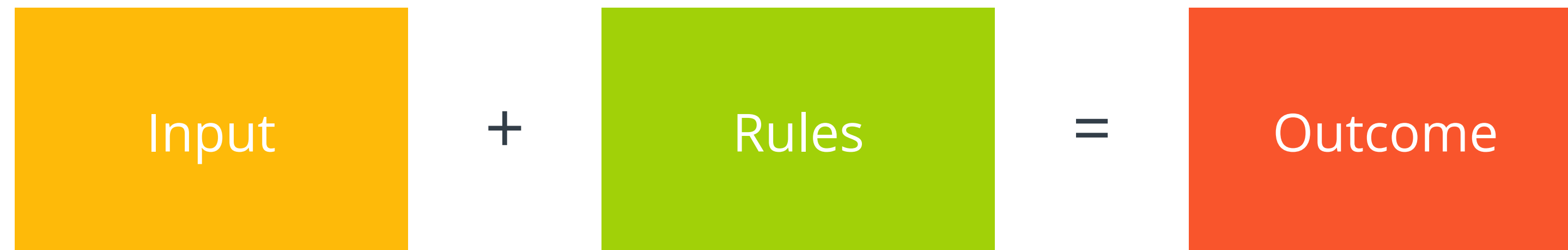
Imagine all the data your sensors gather, but just throw away

Devices are cost, bandwidth or power constraint

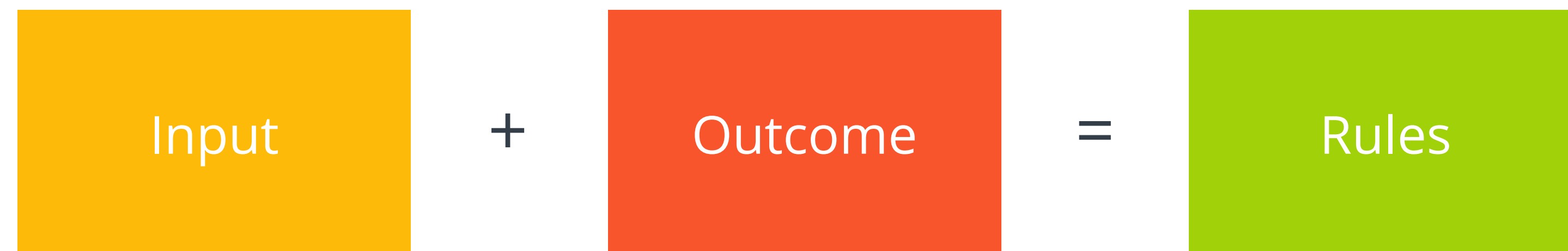


# Machine learning helps you find the rules

Normal programming



Machine learning





# Widely applicable



Biosignal analysis

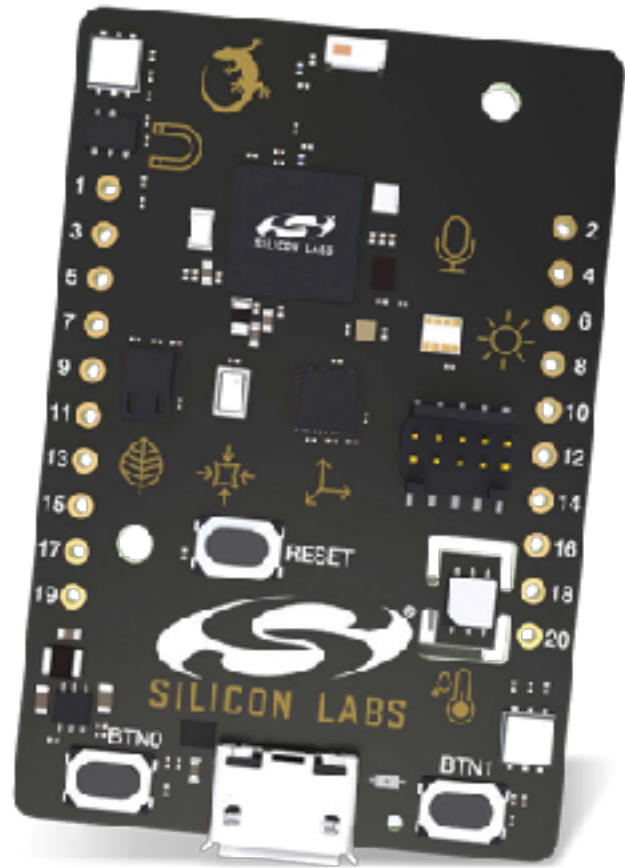


Detecting abnormal vibration

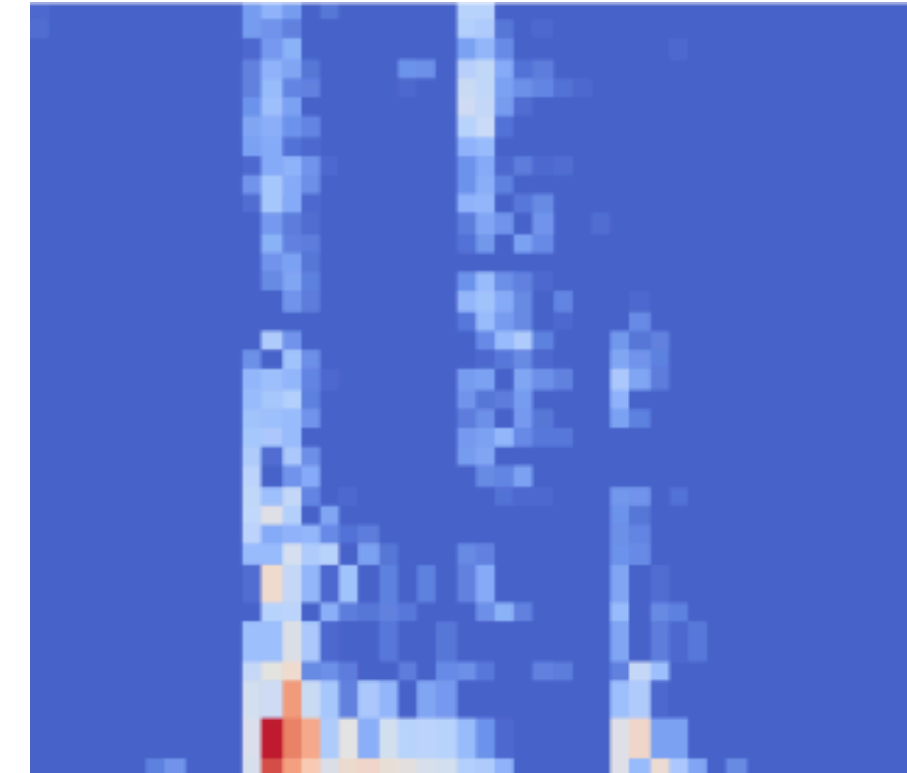




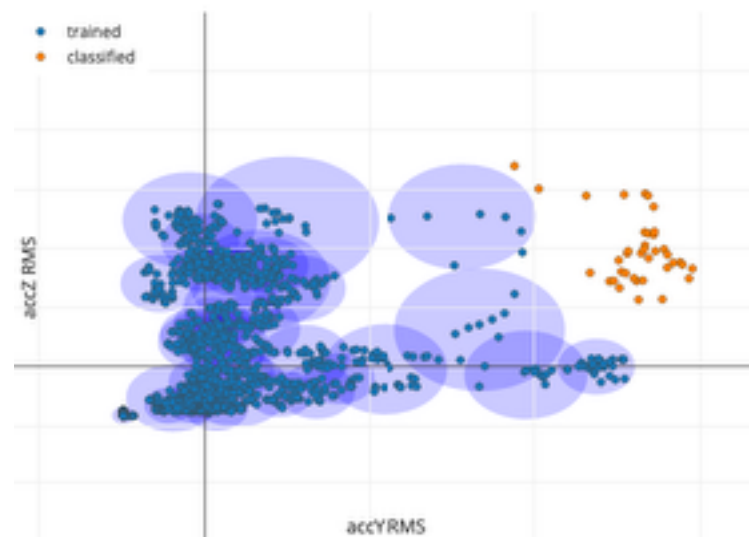
# Your first ML project



**1. Gather data**  
*Thunderboard Sense 2,  
fully supported by Edge Impulse*



**2. Extract features**  
*On-device intelligence is not new  
Go as far as possible with DSP*



**3. Learn from the data**  
*Classification, regression,  
anomaly detection?*



**4. Deploy to device**  
*It's just math. DSP + ML w/ full hw  
acceleration on SiLabs silicon.*





# Demo 🚀

