

## Data Project

We have a challenge to get you familiar with our technology! We have recorded two datasets of vibration data from two different machines using our **AiSight** Sensor-node. It would be great if you could go through the data of one of the two machines and present your insights in a presentation/report and send it together with your code to [hiring@aisight.de](mailto:hiring@aisight.de)

Timeline for this project is 5 days, but of course you can hand in earlier ;)

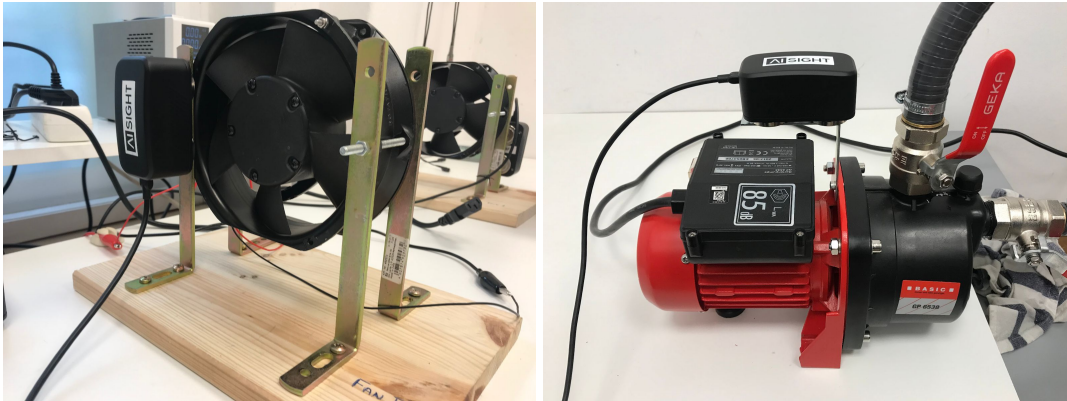


Figure 1. **AiSight** Sensor-node installed at an Industrial Fan and Pump

## DataSets: You can choose one of the two machines!

Available @ <https://aisight.de/drive/dataset/2019-05-03/DataSet.zip>

The compressed file above contains two different datasets:

- *project\_fan.csv* - Data recorded at an Industrial Fan
- *project\_pump.csv* - Data recorded at an Industrial Pump

## CSV structure:

- Without header rows!
- Columns are the following:
  - Unix time
  - Amount of samples
  - Time period (milliseconds)
  - Sampling Rate
  - Sensor data (millivolt reads)

## What we are looking for:

- Please identify different machine states in the data set and cluster them.
- Come up with a classification algorithm that classifies the states into: State 1, 2, 3 etc...
- A well structured and organized report, presentation or any way that you think is best suited.
- Your code in a .zip file
- Freedom: Feel free to choose your own programming language / Data Scientist's Toolbox.
- And, of course, good insights :)

## References

- Measuring Vibration by Brüel & Kjær's <https://www.bksv.com/media/doc/br0094.pdf>
- Application Notes: Vibration Diagnostics for Industrial Electric Motor Drives <https://www.bksv.com/media/doc/BO0269.pdf>
- The Role of Vibration Monitoring in Predictive Maintenance  
[https://www.schaeffler.com/remotemedien/media/\\_shared\\_media/08\\_media\\_library/01\\_publications/schaeffler\\_2/technicalpaper\\_1/download\\_1/the\\_role\\_of\\_vibration\\_monitoring.pdf](https://www.schaeffler.com/remotemedien/media/_shared_media/08_media_library/01_publications/schaeffler_2/technicalpaper_1/download_1/the_role_of_vibration_monitoring.pdf)

For any questions regarding this project, contact us at: [hiring@aisight.de](mailto:hiring@aisight.de)