HEXASTATE:

Condition Monitoring Insights

HEXASTATE:

Identifying Mechanical Issues

Hexastate's AI-driven vibration analysis is highly effective at identifying and classifying mechanical issues before they result in breakdowns.

Our proprietary algorithms analyze millions of vibration data points daily and apply both sophisticated pattern recognition techniques and a large toolbox of vibration expertise, to forecast potential failures.

Based on Hexastate's own field data, the probability that our AI-driven vibration analysis can identify mechanical issues before a breakdown occurs is **>90%***.

This metric describes:
- Cases where Hexastate has identified mechanical issues and verified correctness with maintenance technicians, preventing a breakdown.
- Cases where the system correctly identified issues before a breakdown occurred, but no corrective action was taken.

This high detection rate ensures that maintenance technicians can address issues before they become serious problems, effectively minimizing unplanned downtime and reducing maintenance costs.

>90%*
of issues are caught before a breakdown happens

HEXASTATE:

The economics of a condition monitoring solution

To grasp the economics of implementing a condition monitoring solution, it is important to know how many breakdowns are expected to occur on the equipment that will be monitored.

At Hexastate, we always recommend clients to develop a criticality analysis that outlines the machinery which is highly critical to their operations. This approach ensures that the solution will provide significant value from the start, and that no insignificant equipment is monitored.

Although highly relevant when purchasing equipment, reliability metrics from a supplier such as Mean-Time-Between-Failures (MTBF), fail to be accurate unless factors such as environmental conditions, maintenance practices and usage patterns matches the suppliers' case. For this reason, it can be difficult to discern how implementing a condition monitoring solution will impact economy.

At Hexastate we have conducted research on our internal statistics that outlines the unit economics that our customers experience when a breakdown happens.

4
hours

Avg. duration of
a breakdown

15.000
EUR

Avg. hourly cost of
a breakdown

Average breakdown frequency

# Assets w/ monitoring	# of breakdowns annually
2	0.1
10	0.5
20	1
40	2

The number of breakdowns is affected by many factors. Most significantly whether a reactive or preventive maintenance strategy is implemented beforehand. This directly impacts how effective implementing monitoring will be. Of course, with a reactive strategy, the benefit will be much higher.

Machine type: Motors
Electric Motors

**AC Motors are a crucial component for nearly all industries, mainly:
Manufacturing, Energy & Utilities, HVAC and Logistics.**

The electric motor is one of the most widely used assets across various industries. It plays a fundamental role in driving a broad range of production and process equipment, making it critical to operation.

Unplanned downtime due to motor failures can be extremely time consuming and therefore costly. However, through effective condition monitoring, much of this downtime can be avoided altogether, ensuring continued and reliable operation.

Our AI-powered vibration analysis frequently identifies the following fault types in electric motors:

- **Structure Flexibility issues (Looseness)**
- **Shaft Unbalance & Misalignment**
- **Bearing Wear**
- .. and many more

See more at **Hexastate.com/Motors**

HEXASTATE:
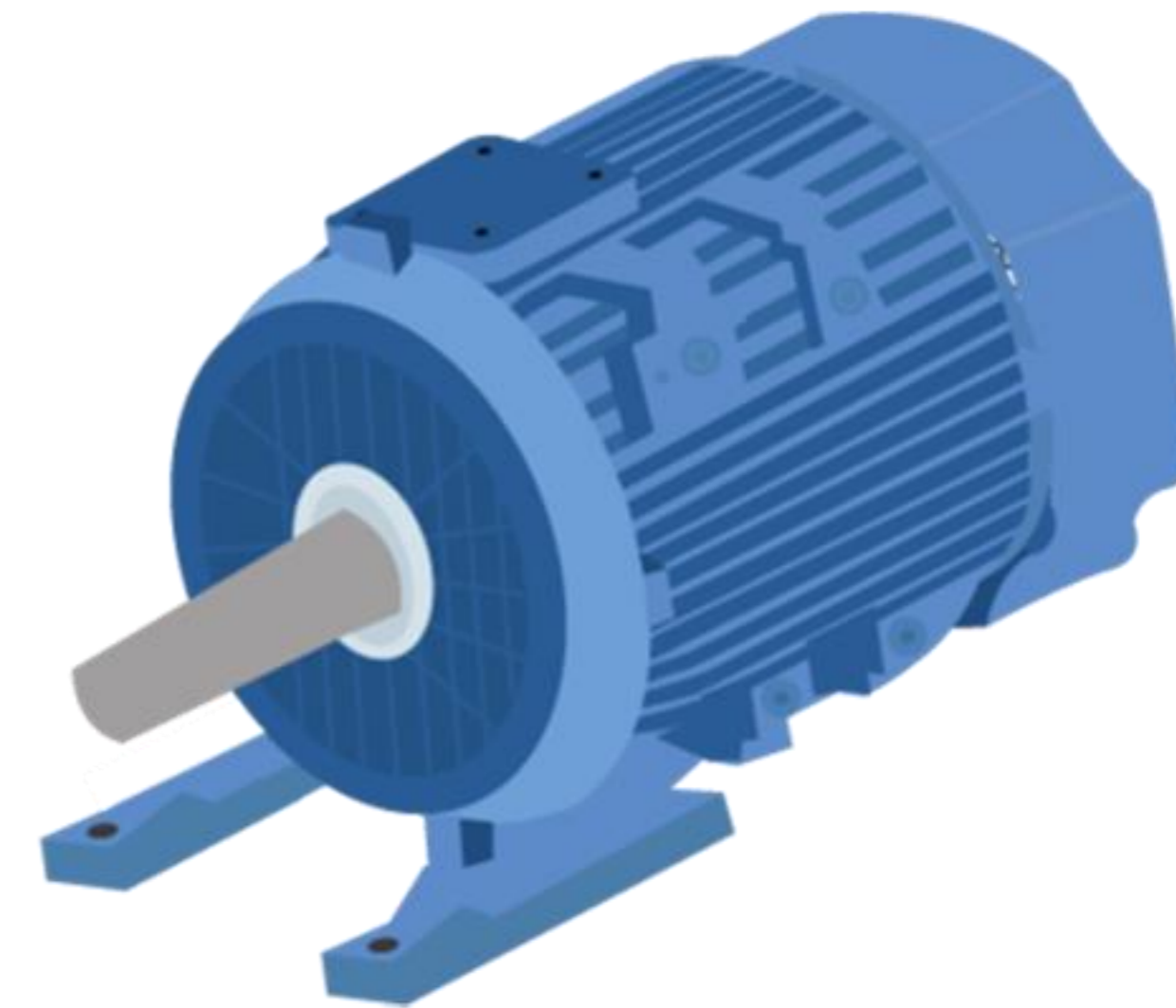
Machine type: Pumps
Centrifugal Pumps

Pumps are categorized as one of the most critical asset types in most industries. When pumps are malfunctioning, it can cause expensive downtime while decreasing the reliability in a production.

Our AI-powered vibration analysis frequently identifies the following fault types in pumps:

- **Cavitation**
- **Shaft Unbalance & Misalignment**
- **Bearing Wear**
- .. and many more

See more at **Hexastate.com/Pumps**
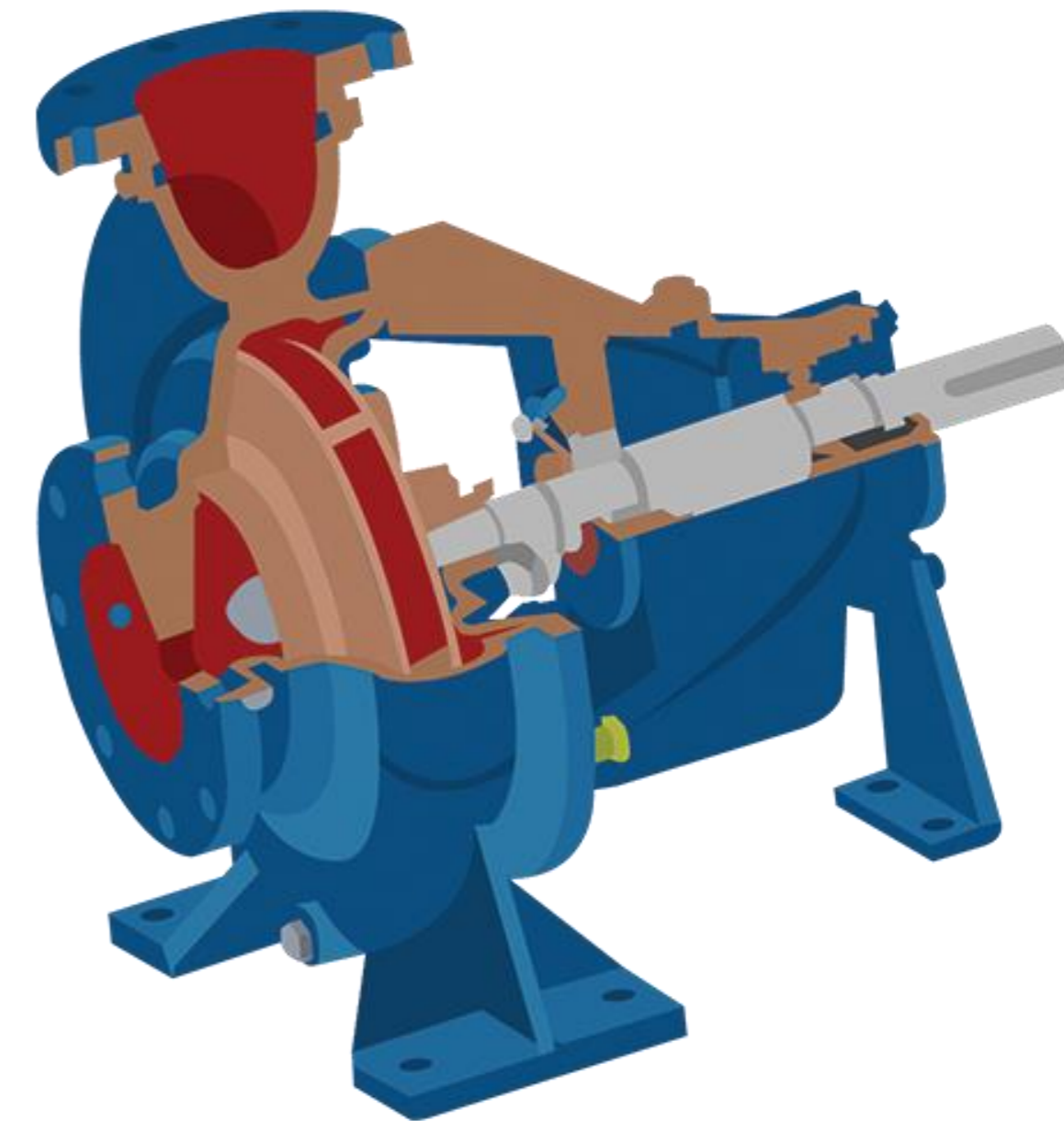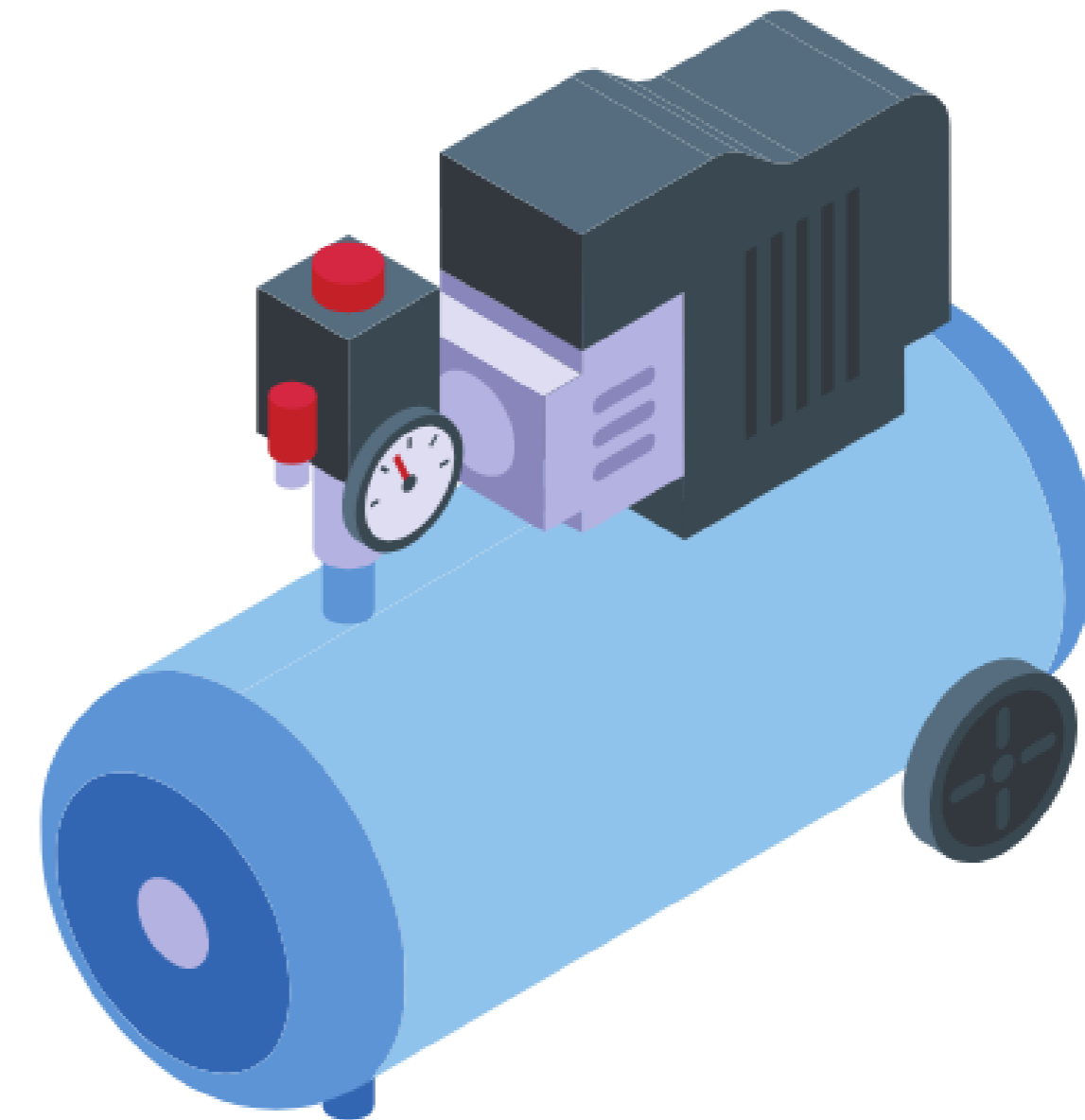
Machine type: Compressors

Compressors are an important asset type in multiple industries, including: **Manufacturing, Energy & Utilities, HVAC and Logistics.**

The industrial compressor is an important asset across many industries. Its role in powering critical applications such as cooling makes it indispensable to the functioning of operations.

Unplanned downtime caused by compressor failures can lead to significant disruptions in operation and significant costs. By utilizing effective condition monitoring, much of this downtime can be avoided.

Our AI-powered vibration analysis frequently identifies the following fault types in compressors:

- **Shaft Unbalance & Misalignment**
- **Resonance**
- **Bearing Wear**
- .. and many more

Component: Bearing
Rolling Element Bearing

Bearings are essential to nearly all types of rotating equipment such as:
Motors, Pumps, Compressors, Fans and many more.

Bearings are an essential and critical part of most rotating machines and will often be the direct root cause for machine failure as they either wear out, are damaged by improper installation or incorrect lubrication.

Unplanned downtime due to bearing failure is costly, due to the amount of time it takes to replace. This does not need to be the case, as real time monitoring ensures that you are notified long before your bearing fails.

Our AI-powered vibration analysis frequently identifies the following fault types in bearings:

- **Stage 3 & 4 Bearing Wear** (Outer Ring Wear, Inner Ring Wear, Rolling Elements Wear)
- .. and many more

See more at **Hexastate.com/Bearings**

HEXASTATE:

Vibration Analysis Operational Metrics

Hexastate empowers industrial manufacturers with smart automation solutions designed to prevent expensive breakdowns and maximize production efficiency.

Through our AI-driven monitoring and predictive maintenance technologies, we provide the tools needed to optimize operations and minimize downtime.
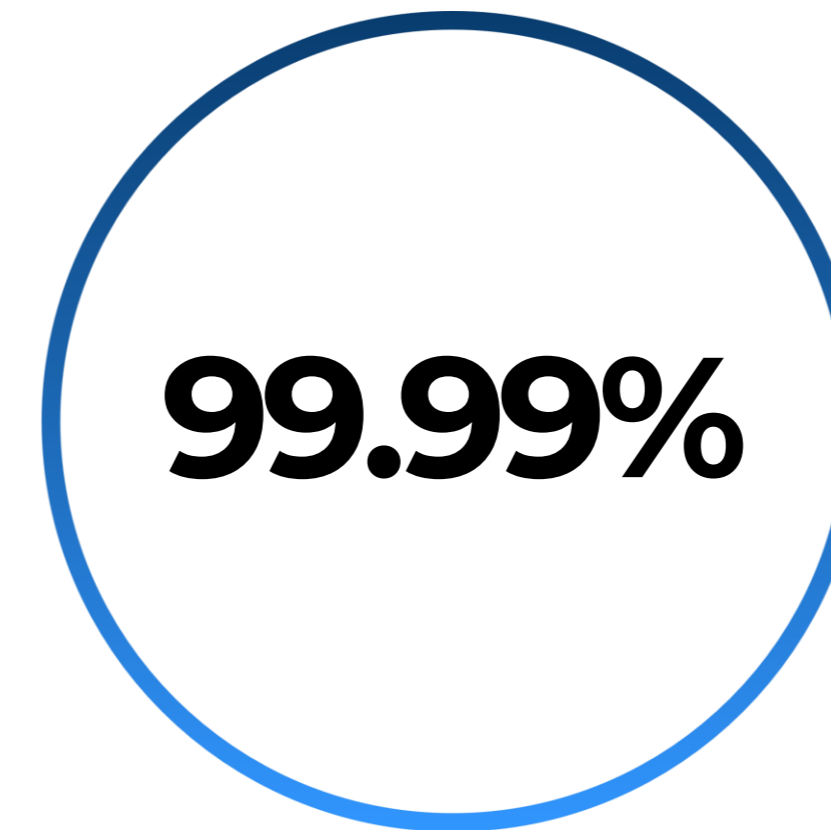
Our mission is to ensure that your production activities remain seamless and cost-effective, allowing you to stay ahead in a competitive market.

+1 million

>1.000
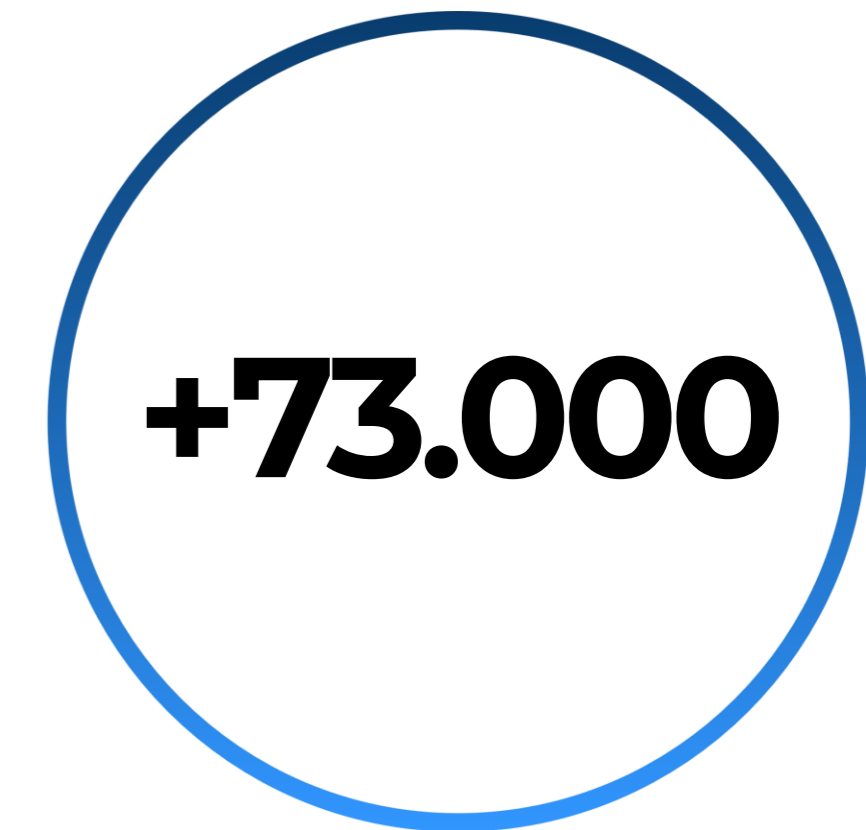
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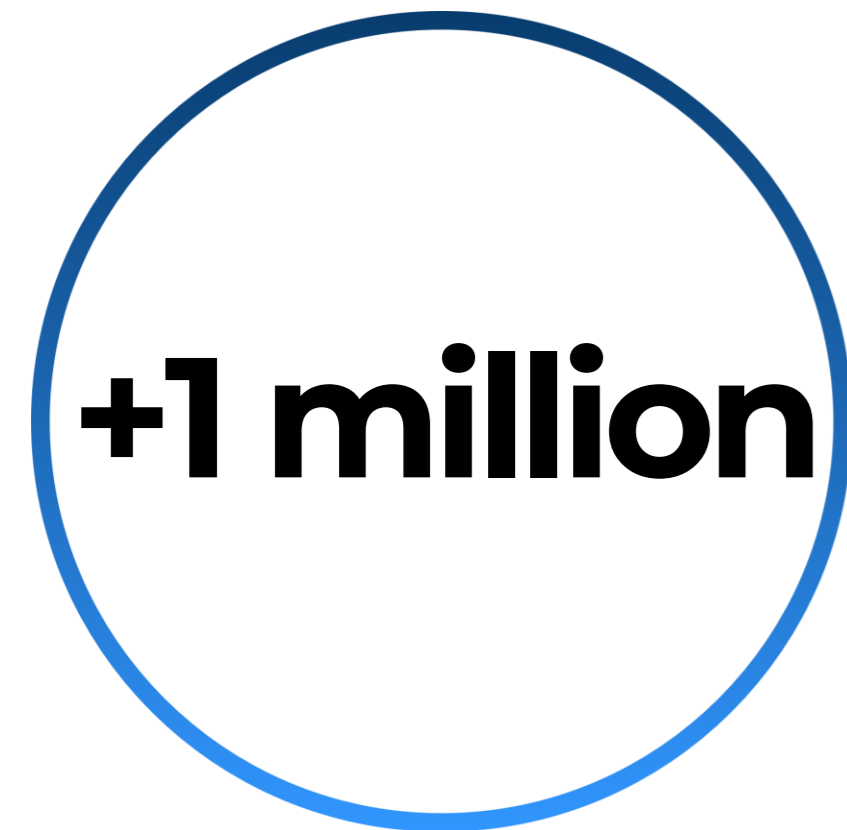
Vibration measurements processed daily
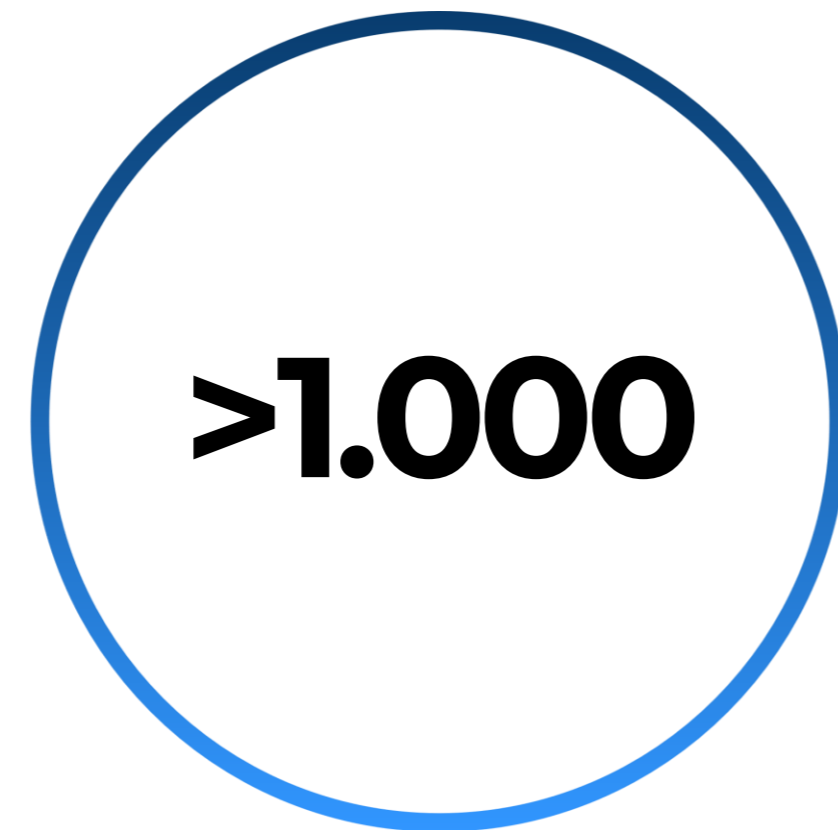
Health predictions daily

API Uptime

Lines of backend code