Machine Learning
for Industry 4.0

elunic®

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Digital transformation and user interactions through apps generate valuable usage data. Together with operating data derived from sensors and machines (IIoT), they provide the foundation on which improvement potentials are identified and predictions made. Outdated, rule-based systems are overwhelmed by ever-increasing data complexity and volume.

In contrast, self-learning models based on Machine Learning and Deep Learning (AI) are capable of exploiting the full data potentials, even if complexity increases.

Why elunic?

- Industry knowledge in mechanical engineering
- Specialized in Machine Learning
- Broad architecture, platform and interface expertise
- Flexible connection to existing infrastructures
- Successful reference projects

ASM weber SYSKRON thyssenkrupp GÜDEL eos

Artificial Intelligence - The Brain of the Smart Factory

These models learn the interrelations between different sensor values, to process data and to detect anomalies which a programmer, due to sheer volume and variety, would never be able to teach a machine. The possibility of real-time monitoring enables even unknown problems to be identified in due time and expensive failures to be avoided.

The rapid advancement of specialized hardware for solving AI tasks has now opened the door to economical use in many areas of production. Examples are:

- **Predictive Maintenance**
  These models recognize patterns in process data and operating data to compute the remaining service life of components and machines.

- **Quality Improvement**
  Offers object and error detection, e.g. by real-time processing of live images and video material.

- **Optimization of Resources and Supply Chains**
  Companies and suppliers can identify supply chain bottlenecks at an early stage enabling them to meet deadlines better and to avoid production shutdowns.

Practical Example
Quality Improvement in Production

Surface inspection, contour and size measurement or position and orientation sensing are just a few examples illustrating the applications of machine vision.

Apart from a full range of possible applications, this I4.0 key technology is characterized by its enormous data potential and its versatile operational capabilities.

Its system performance is based on hardware optimized specifically for processing image data.

So-called "tensor cores" in combination with brand-new algorithms and cutting-edge technologies make it possible to detect and to locate objects or process errors regardless of their background.

elunic AG: I4.0 Competence for SMEs

Every company must face the digital transformation trend and make the transition from a traditional machine manufacturer to a software company. The project management should be carried out internally to build up competency in-house.

With an experienced I4.0 service provider like elunic, companies can accelerate their digitization process considerably. We also support you in choosing the right technology and the best methodical approach from the wide range of possible options.

Successful companies have chosen elunic as their business partner, because:

- **Experienced partner for I4.0 & machine learning projects**
  Dozens of medium-sized companies have successfully entered the I4.0 age with elunic. With its 15 years of experience, the service provider, based in Munich, will also make your digitization project a success.
- **Well connected**
  I4.0 projects succeed in cooperation with manufacturers and suppliers only. elunic's network has been benefiting its customers all around and, thus, enables fast decision-making and access to best practices.
- **On-Stop Strategy and Platform Provider**
  elunic designs tailor-made I4.0 strategies for its customers. The in-house software platform allows for quick implementation and rapid project success.

Consulting, development & integration of your AI projects - all as a one-stop solution.

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