

TVARIT is a specialized Deep Tech company based in Frankfurt, Germany, providing Industrial AI solutions for the metals sector, with a strong focus on foundry operations including die casting, low-pressure die casting, gravity casting, and iron casting.

Its mission is to drive sustainable, zero-waste manufacturing by significantly reducing energy losses and scrap while maximizing machine, tool, and equipment availability through expertly designed, patented hybrid AI solutions.

At the core of TVARIT's offering is the TiA® software suite (Tvarit Industrial AI), including Prescriptive Quality, Prescriptive Energy, and Prescriptive Maintenance. These solutions enable manufacturers to predict casting quality, analyse root causes of defects and losses, optimize process parameters and windows, reduce energy inefficiencies, and minimize unplanned maintenance and tool wear.

TVARIT's patented technologies combine physics-based models, machine learning, and process-expert knowledge, allowing manufacturers to move beyond prediction to prescriptive AI – not only forecasting what will happen, but recommending how the process should be configured. This is achieved through a three-layer approach: AI-based anomaly detection with predictive alarms, automated data-driven root cause analysis, and parameter optimization, all deployed in a modular manner depending on available data and digital maturity.

As a result, TVARIT enables up to 50% lower casting scrap and 10% lower energy consumption within six months, bridging the gap between advanced AI capabilities and everyday shopfloor operations. Its highly scalable models empower manufacturers to act proactively on complex process deviations, minimizing downtime, enhancing reliability, and supporting a holistic digitalization journey.

With customers across five continents, including leading metal manufacturers such as SAG, Endurance, Alicon, Schunk Group, and Maxion Wheels, TVARIT has been recognized as the Best AI Company in Europe by the European Data Incubator (EDI) and frequently collaborates as part of a consortium that includes leading casting research institutes such as Fraunhofer IFAM. As part of this commitment, TVARIT is supporting the three-year HiQFoundry research project, together with strong research and industry partners across Germany, funded by the Federal Ministry for Economic Affairs and Climate Action (BMWK).

Engineered for the metals industry. Trusted on the shopfloor.