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AI Ecosystem Catalogue

Partner Solution Brief

DarwinAI - AI for Manufacturing Enterprises

DarwinAI equips manufacturers with a unique AI solution to increase and optimize automation and reduce costs

DarwinAI, the explainable AI company, enables enterprises to build AI they can trust. Based on years of distinguished scholarship at the University of Waterloo, Canada, the company's patented explainability technology democratizes advanced enterprise AI applications.

DarwinAI's solutions are used in leading advanced manufacturing and industrial automation settings. The company was named in Gartner's October 2019 *Cool Vendors in Enterprise AI Governance and Ethical Response report*. CB Insights also selected DarwinAI for its annual *AI 100* list. In addition to providing manufacturers with AI, DarwinAI has applied its deep expertise in AI to help combat the COVID-19 pandemic with ARM through the development of COVID-Net, an open source system to diagnose COVID-19 via chest x-rays (read more about how we did this, here).

DARWIN AI

Use Case: Manufacturing process optimization, anomaly detection, quality inspection with computer vision.

Arm IP: Cortex-M; Cortex-R; Cortex-A; Ethos Processors; Arm NN.

Speciality: Edge XAI (Explainable AI)

DarwinAI enables enterprises to build and implement AI-assisted systems that speed up operational processes and reduce costs.
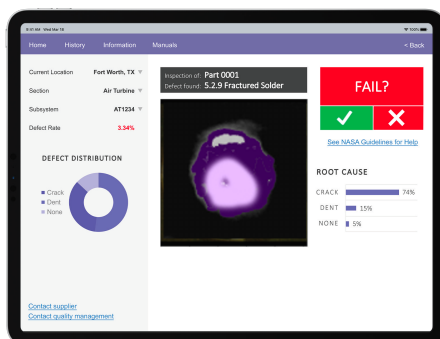

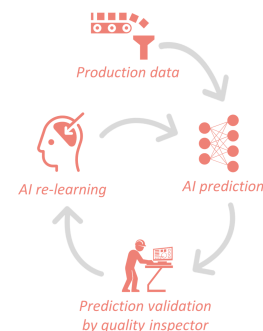Figure 1: Intuitive interface for operators, at the edge

Figure 2: Continuous learning and continuous monitoring

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The Challenge: Achieving adaptive factory automation
and equipment process automation with high precision

Problem 1: AI Requires Large Datasets	Problem 2: Can't Send Data Externally	Problem 3: Validation Requires Human-in-the-loop

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The Solution: Manufacturing XAI at the Edge

AI solutions are adept at recognizing when a data sample or set deviates from expectation, even for complex input/output relationships and at high rates and volumes. In manufacturing environments, such solutions usually leverage images, videos, audio or tabular datasets. With these seemingly simple building blocks, enormous value can be unlocked in a wide range of manufacturing environments.

Within the context of adaptive factory automation, it's important to work with an AI platform that enables system operators to identify the root causes of problems faster through intuitive UIs. Whether your AI applications are enabling you to make decisions in the service of predictive maintenance, parts inspection, adaptive robot picking or federated equipment learning, you must be able to rely on an AI system that is both transparent and trustworthy.

In the case of quality inspection at the edge, DarwinAI's Explainable AI system can meet the most demanding requirements for your Manufacturing use cases and provide robust tooling that enables your enterprise to avoid delays, make decisions confidently, enable your personnel to work smarter, and ultimately save the expense of costly rework and additional parts and labour. DarwinAI's proprietary technology makes our system unique and best for Manufacturers that want to adopt AI at scale. Our compatibility with ARM's Cortex-M, Cortex-R, Cortex-A, Ethos Processors, and Arm NN make this process easier to implement at scale and further optimized.

The Result: Saving Manufacturers Time and Money, while
Enabling Confident Decision-Making.

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