

World Manufacturing Week 2020
November, 9th-12th

Collaborative and Explainable Artificial Intelligence

AI that we can trust and interact with



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INESC TEC and its partners have been tackling different problems with AI



MANTIS: Predictive Maintenance



H2020-EU.2.1.1.7. - ECSEL

- Root Cause Analysis → Supervised Learning (Bayes Networks)
- Failure Detection → Unsupervised learning (Outlier detection)
- Failure Prediction → Supervised learning (Survival Analysis)

Fabric Textures Recognition: Quality Control

One to One Research Project



Process Control

Funded by BA Glass



- Data Preparation → Unsupervised Learning (Dynamic Time Wrapping, Clustering)
- Pattern Classification → Supervised learning (Random Forest)
- Policy Learning → Reinforcement Learning

iTool - Efficient, Smart and Optimized Molds for Industry



Zero Defects 4.0

EIT Manufacturing



- Data Preparation → Dimensionality Reduction (PCA, Shrinking Methods)
- Defect Classification → Sup. Learning (XGBoost, Random Forest, Auto-encoders)
- Recipe Recommendation → Optimization (Basing-Hopping, Nelder-Mead, Particle Swarm Optimization)
- Product Development → Predictive Model Generation (Hyper-Process Model)

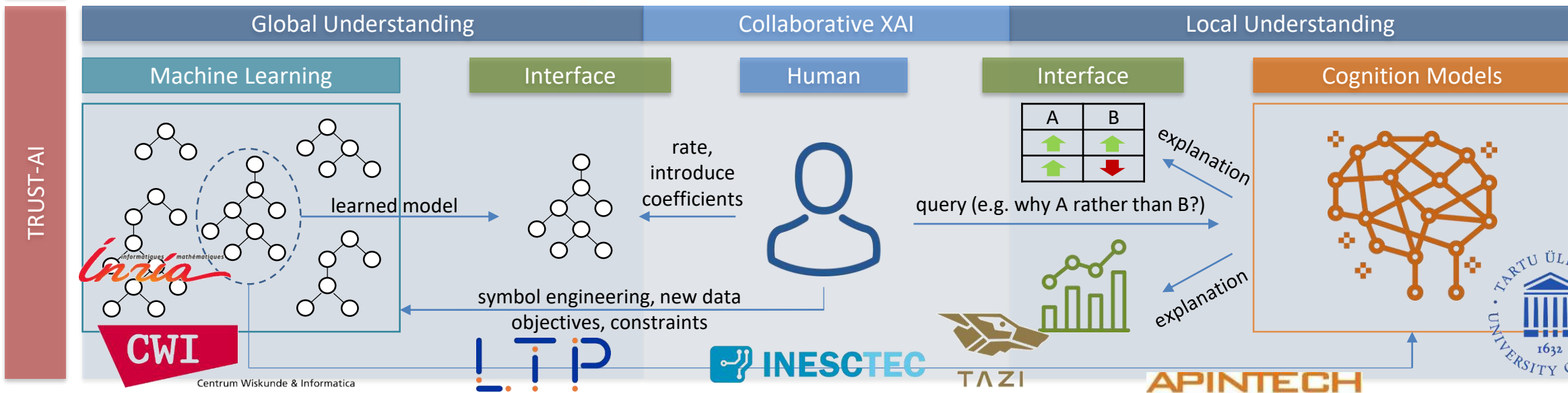
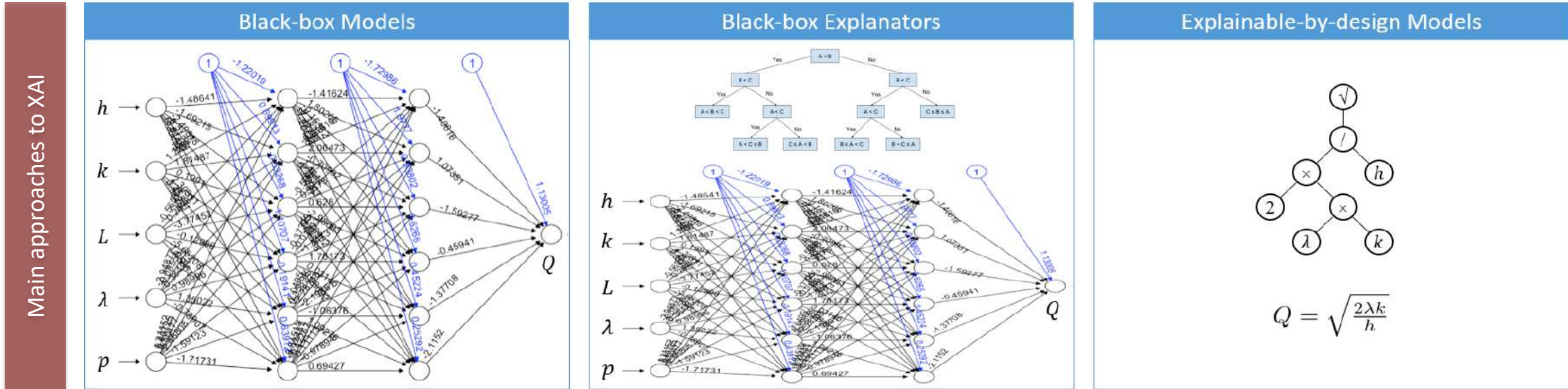
Mobile Manipulator Intralogistics Operations

H2020-EU.2.1.1. - INDUSTRIAL LEADERSHIP – ICT



TRUST-AI: Transparent, Reliable and Unbiased Smart Tool for AI

H2020-EU.1.2.2. - FET Proactive | <http://trustai.eu/>



We can apply the TRUST-AI framework in different AI paradigms and to a variety of problems

