



Why is it important for Supply Chain?

Explainable Artificial Intelligence (XAI) is an emerging field in machine learning that aims to address how black box decisions of AI systems are made. This area inspects and tries to understand the steps and models involved in making decisions.

"Explainability" or "Interpretability", allows users to gain insight into the machine's decision-making process.

> Why didn't the Al system do something else?

When do Al systems give enough confidence in the decision that you can trust it?

Why did the Al system make a specific prediction or decision?



How can the Al system correct errors that arise?

> When did the Al system succeed and when did it fail?

## Why?

Decisions and predictions being made by AI-enabled systems is becoming much more profound, particularly in supply chains they have huge financial impact.

Most users have little visibility and knowledge on how Al systems make the decisions they do.

### **Metrics**

### **1. Prediction accuracy**,

which means models will explain how conclusions are reached to improve future decision making,

Many of the algorithms used for machine learning are not able to be examined to understand specifically how and why a decision has been made.

As humans, we must be able to fully understand how decisions are being made so that we can trust the decisions of Al systems. The lack of explainability and trust hampers our ability to fully trust AI systems.

2. Decision understanding and trust from human users and operators,

3. Inspection and traceability of actions undertaken by the AI systems.

### How?

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# So far, only nascent works has been done :

- Use of machine learning algorithms that are inherently explainable or self-explaining, e.g. Decision trees, Bayesian classifiers, Self-Explaining Neural Networks, etc. - Use of confidence profiles for simple models.

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