

# EpEx<sup>®</sup>

A robust diagnostics and explanation engine for dynamic complex systems.



## WHAT IS IT?

Episodic Explanation Engine (EpEx<sup>®</sup> Engine) is a reasoning and diagnostics engine for understanding dynamic complex systems such as autonomous platform environments, multi-domain missions, and human systems providing explainable performance assessment, behavioral analysis, and prediction.

## HOW DOES IT WORK?

EpEx<sup>®</sup> Engine integrates episodic memory and causal reasoning to create a diagnostic capability mirroring human analysis techniques that delivers understandable and actionable analysis of complex systems. EpEx<sup>®</sup> Engine provides flexibility in data sparse domains and increased confidence in complex systems.

## WHAT DOMAINS CAN IT IMPACT?

- Improved Machine Learning of Causal Models
- APIs to integrate existing MBSE & behavior models
- Machine-to-Machine Explanation
- Improved Text Summarization and Speech Interfaces
- Integration SDK



## Capability Overview

- **Mirrors human ability to analyze complex systems** by integrating episodic memory and causal reasoning to deliver understandable, actionable analysis.
- **Supports a wide range of end user needs** from diagnostic metrics to sophisticated explanations by integrating with various ML classifiers and event detectors for optimum performance and supporting responsible, traceable, and trustworthy AI.
- **Operates in data-sparse environments** where its causal models require little to no training data, work with limited input data, and generalize across specific target systems.
- **Adapts across domains**, allowing fast reconfiguration for new situations and changing behaviors in future training, test and evaluation, and operational mission debrief systems.

## Proven Use Cases

- Autonomy mission debrief
- Counter swarm planning
- Medical triage
- Surface warfare analysis
- Sensor operation

## Let's Chat!

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