What's new in Microsoft Project Bonsai January 2021

What is Project Bonsai?

Microsoft Project Bonsai is a low-code AI development platform that speeds the creation of AI-powered automation to improve production efficiency and reduce downtime. Without requiring data scientists, engineers can build specific AI components that provide operator guidance or directly make decisions to optimize process variables.

Areas of investment

Project Bonsai empowers engineers to build and design AI-powered automation without a background in data science. With AI helping across the factory floor, operators can make more consistent decisions and reduce the burden on expert staff. This helps organizations reach their automation goals.

We're investing in four key areas:

1. **Easy to get started** so users can start building AI quickly.
2. **Enable AI for engineers** to empower those without a data science background to build AI for plants and equipment.
3. **Simulation integrations** that expand the types and interconnectivity to simulations to safely train your AI.
4. **Explainable and trusted AI** that provides transparency and helps improve compliance.

What's new?

Easy to get started

Improvement of experiences to make them simple, fast, and intuitive include:

- **Import existing AI model:** Import trained AI models (in ONNX format), into a new or existing Project Bonsai optimization project.

Enable AI for engineers

Empowering engineers to build AI without a data science background is enabled with the following:

- **Performance assessment:** Understand how your AI is performing and what you can do to improve its performance without writing any code.
- **Concepts**: Allow a single AI agent to learn multiple, different skills and strategies by breaking down the overall problem into pieces. Dependencies and versions are tracked.

- **Short-term memory**: AI remembers the last few things it experienced and uses that information to help it inform upcoming decisions.

Simulation integrations

Simulations are used to safely train and validate an AI that will work in the physical world, the following is the current list of integrations with simulation products:

List of Supported simulators (as of January 18, 2021):

Simulator	*Software*	*Details*
Ansys	Digital Twin	multi-physics engineering, focused on CFD & FEA
AnyLogic	7, 8	Discrete event process simulator
KBC	Petro-Sim	Petro-SIM is a refinery simulator used in energy
MathWorks	Simulink	Simulink in multidomain dynamical systems
MuJoCo	MuJoCo	High fidelity robotics simulation
OpenAI Gym	Python	Toolkit for developing and comparing reinforcement learning algorithms
Siemens	Amesim	Broad simulator portfolio for many use cases
Wood PLC	VPLink	Distributed control systems and operator training systems

Explainable and trusted

Understand why AI made decisions with black-box-free AI and gain trust with new compliance and privacy features:

- **Azure Private Link support:** Use private virtual network connections for interactions between Project Bonsai and customer's Azure resources when compliance dictates that they must not communicate over the public internet.