Bonsai At A Glance

About

Bonsai's AI Platform empowers enterprises to build and deploy intelligent systems

Product

The Bonsai Platform provides developers, data scientists and subject matter experts with the technology and tools to more effectively program and manage AI models.

Use Cases

Bonsai enables enterprises to program AI models to increase automation and improve operational efficiency of industrial systems including robotics, manufacturing, supply chain, logistics, energy and utilities.

Benefits

- AI-enable your development team
- Reuse and share your code and models
- Debug, inspect, & refine your AI
- Build models independent of underlying algorithm
- Host and collaborate on existing models

Solution brief

Program AI models to enhance decision support and drive increased operational efficiency

At the heart of every business there are critical systems and processes driving operations across functions including manufacturing, supply chain, logistics, customer service, and resource management. The continuous testing, refinement and optimization of the many variables, behaviors and configurations that drive the outputs of these systems could lead to significant competitive advantage, productivity improvements, and cost savings,

Examples of real world applications that could see significant benefits from enhanced decision support include:

- Customer & Employee Satisfaction (e.g. Queue Wait Times, Customer Service, Patient Care, Worker Productivity)
- Operations (e.g. Manufacturing Process, HVAC Systems, Assembly Line Output)
- Planning (e.g. Urban Planning, Retail Location & Layout analysis, Capacity planning, Inventory Management, Disaster planning)

Despite the availability of potentially impactful technologies including artificial intelligence (AI), the biggest challenge for any enterprise looking to optimize any one of these systems up to now has been the breadth and complexity of the effort. Manually modeling and optimizing every variable within multi-dimensional business systems, such as a supply chain, logistics or HVAC, quickly

outruns the time, budget and skillset of many development teams. With Bonsai you can leverage internal skills and expertise to program AI models to improve prediction accuracy and real time decision support, resulting in greater operational efficiency from these sophisticated industrial systems.

The Bonsai Platform

Bonsai abstracts the complexity of machine learning libraries like TensorFlow, enabling an enterprise to build AI models that optimize decision support without requiring an advanced degree in machine learning. The Bonsai Platform provides developers, data scientists and subject matter experts with the tools to more effectively program and manage AI models that are informed by an enterprise's unique domain and subject matter expertise. In a continually evolving environment like a modern city, for example, your organization's intelligence around urban planning is your asset; incorporating this into your models to, for example, balance parking space allocation with vehicle and pedestrian traffic is a task for your transport planning experts and developers, allowing your data scientists to focus on research using statistical analysis.

With Bonsai's programming language, runtime and tooling, enterprises can more efficiently build application specific AI models that enhance decision support, and drive increased operational efficiency from these sophisticated industrial systems.

Build, Teach, Use

Using Bonsai, AI models are programed and deployed using the following Build, Teach, Use sequence outlined below:

Build

- A developer first codifies a system's unique optimization requirements desired from the AI model using Inkling, Bonsai's special purpose programming language.
- Inkling captures the desired goals of the intelligence model (e.g. increase available parking), and any specified constraints (e.g. while maintaining acceptable vehicle and pedestrian traffic patterns).
- Training sources, such as simulations or data, that will be used by the program when training the model are specified within the platform

Teach

- Collectively, these inputs are fed into the Bonsai's Artificial Intelligence Engine to generate and train an AI model - one where appropriate behaviors have been learned with the underlying machine learning components managed for you.
- Developers, engineers, and subject matter experts can also debug, inspect and refine the model to further improve the output or incorporate additional scenarios.

Use

- The model produced from the AI Engine can then be connected into your software and hardware applications through Bonsai provided libraries (just like you would connect a database to your application).
- Your application will be able to stream in data and receive predictions from your AI model

Key Benefits

The Bonsai Platform brings together state of the art techniques in machine teaching and machine learning, providing developers, data scientists and subject matter experts with the tools to teach the desired intelligence to a system, while automating the complex, low level mechanics of machine learning. Using Bonsai, enterprises can more efficiently build application specific AI models that increase the automation and operational efficiency of sophisticated industrial systems.

Specific benefits to be realized from using the Bonsai platform to program your AI models include:

- **AI-enable your development team.** Bonsai allows developers to focus on programming concepts unique to a specific problem domain, leaving the management of complex, low level AI mechanics to the Bonsai AI Engine
- **Reuse & share code & models.** Programming of intelligence at a higher level of abstraction enables code and model reuse. System libraries and shared models can be leveraged across development teams.
- **Debug, inspect, & refine your AI.** The high level models produced by Bonsai enable you to understand what contributed to a prediction, identify conceptual gaps and bugs, and constantly refine your models.
- **Build models independent of underlying algorithm.** As machine learning and deep learning algorithms evolve, your Inkling code can be recompiled and retrained to take advantage of low-level technology advances.

Build AI models that optimize decision support without requiring an advance degree in machine learning.

- **Host and collaborate on existing models.** Interoperability with existing machine learning models allows data scientists to expand the functionality of the platform, and extend these capabilities for use by your development teams.

To learn more about whether your use case is a fit for the Bonsai Platform, visit us at www.bons.ai, or contact us at sales@bons.ai to schedule a demo.

About Bonsai

Bonsai offers an AI platform that empowers enterprises to build and deploy intelligent systems. By completely automating the management of complex machine learning libraries and algorithms, Bonsai enables enterprises to program AI models that improve system control and enhance real-time decision support. Businesses use these models today to increase automation and improve operational efficiency of industrial systems including robotics, manufacturing, supply chain, logistics, energy and utilities. To learn more, please visit: https://bons.ai/ or follow us on Twitter @BonsaiAI.