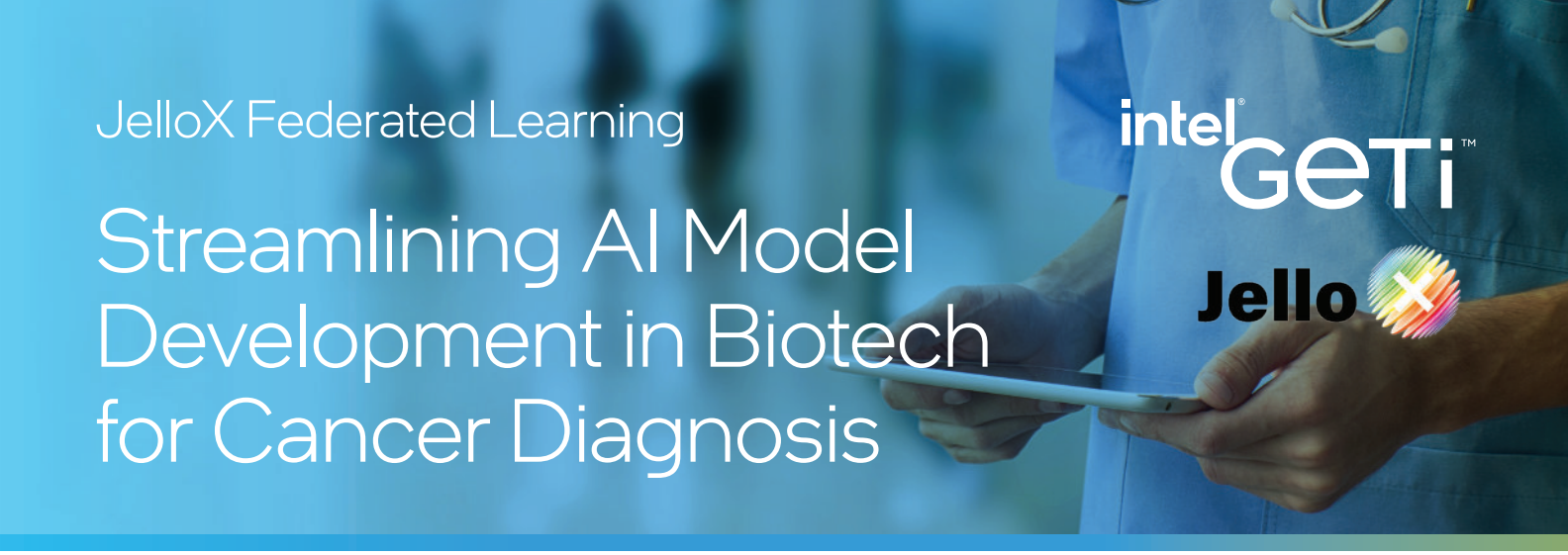
JelloX Federated Learning

Streamlining AI Model Development in Biotech for Cancer Diagnosis



At a Glance

The JelloX Federated Learning Platform allows clinical data from multiple healthcare organizations to be used for collaborative AI model development while meeting regulatory requirements and maintaining patient privacy. The solution utilizes the Intel® Geti™ platform to overcome intense resource requirements for clinical workers to label the data and train vision models.

About JelloX: JelloX Biotech is creating a next-generation 3D digital pathology solution based on digital imaging and AI analysis. It enables precision cancer diagnosis, optimizes patient outcomes and helps match patients to the right therapeutics.

JelloX Federated Learning Platform overview: JelloX Federated Learning Platform enables healthcare organizations to make protected medical images available for AI model training, without explicitly sharing the data itself. Each institution retains its data in its own environment, sharing only model parameters that are learned locally with the others. This approach lets all participants benefit from the data held by others for collective training, without divulging sensitive patient information.

Business Benefits

Overcome limited data

Obtain medical images to train models and reduce sample bias by collaborating among healthcare organizations

Protect patient privacy

Maintain isolation of restricted data while jointly developing AI models across multiple institutions

Enable interdisciplinary work

Share domain knowledge across job roles such as software engineering and medical sciences

Key features and capabilities

- **Federated learning**. Rather than requiring untenable data consolidation and centralized management, federated learning allows each participant to retain ownership and control of its patient data while contributing to shared model training.
- **Privacy protection**. Healthcare organizations protect patient data while collaborating on AI models with other institutions.
- **Intuitive, powerful GUI**. Built to empower collaboration between medical workers, software engineers and data scientists.

Intel products and technologies

- Intel® Geti™ software
- Intel® Distribution of OpenVINO™ toolkit
- Intel® Core™ processors
- Intel® SmartEdge Software
- Intel® OpenFL
- Intel® Software Guard Extensions

Verticals:

- Healthcare

Use Cases:

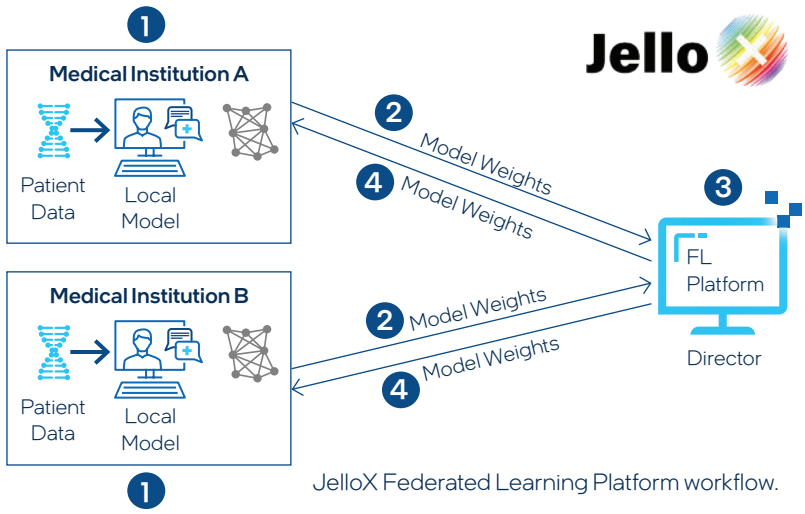
- Image recognition and classification
- Medical imaging, analysis and diagnostics
- Object detection, recognition and classification

Country/Geo:

- Taiwan

"With its friendly graphical user interface and the aids of smart annotation tools from the Intel® Geti™ platform, the JelloX Federated Learning Platform makes collaborative model development feasible among healthcare organizations."

- Chia-Hung, Yang
Machine Learning Algorithm Engineer
JelloX Biotech Inc.

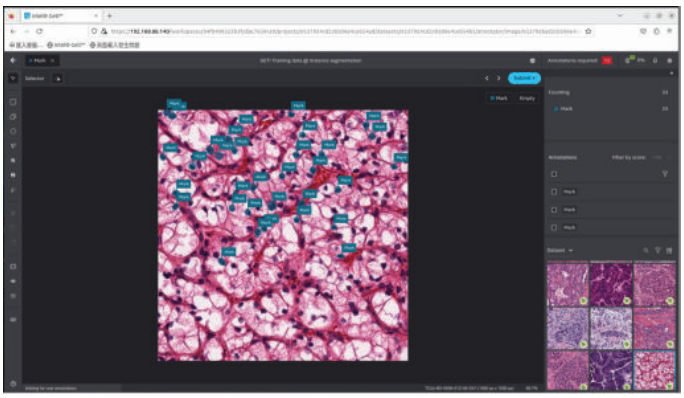


JelloX Federated Learning Platform workflow.

What is the Intel® Geti™ platform?

Powerful AI for everyone.

The Intel Geti software platform makes it possible to build computer vision models in a fraction of the time and with less data. It eases laborious data labeling, model training and optimization tasks across the AI model development process, empowering teams to produce custom AI models at scale.



Example of data labeling and training with the Intel Geti platform on a bacteria dataset.

Develop new computer vision AI models in days. Start with a few images or videos. Annotate your data and train your model. Accept or edit model predictions. Quantize with OpenVINO for maximum performance on Intel hardware. The Intel Geti platform helps you scale your business by developing practical computer vision solutions for improving, automating and digitizing processes.

Why the Intel Geti platform?

Developing deep learning models requires extensive resources to annotate source data. For healthcare diagnostics, that annotation requires the clinical domain expertise of medical workers who have limited time available for such tasks outside the realm of direct caregiving.

Intel Geti software's smart annotation tools, active learning functionality and high usability accelerate the data preparation process, reducing the annotation burden. Active learning helps select the most helpful data to annotate, enabling the model to learn quickly and achieve high accuracy while reducing the sample biases.

The Intel Geti platform also allows healthcare workers and AI experts to work together, unifying their spheres of expertise to empower next-generation precision cancer diagnosis with the JelloX Federated Learning Platform.

Learn More

› JelloX products page **› Intel Geti Platform Website**

JelloX Debut Highlights Potential to Disrupt Cancer Pathology
Reimagining Next Generation Pathology through Federated Learning
JelloX MetaLite® Digital Pathology Edge Solution