Palette™ Software Platform

Highlights

SiMa.ai's Palette™ software platform is designed for complete ML stack application development. The platform supports any ML workflow customers plan to deploy on the edge without compromising performance and ease of use. Palette's integrated ML compiler accepts any model from an ONNX framework. These models, together with optimized pre and post processing libraries, are integrated into the computer vision pipeline using GStreamer. The ML application stack utilizes a full featured embedded Linux (Yocto) or a Debian based OS eLxr. These run times manage and deploy ML use cases. The all-in-one developer platform includes model, application, debug and execution tools which targets SiMa.ai's MLSoC heterogeneous platform.

Palette Development Flow

Create a complete ML workflow involving optimized DNN models, pre and post processing libraries and application logic. Develop applications using GStreamer workflows with advanced scripting and automation tools.

Build integrated applications that are seamlessly compiled and mapped to the MLSoC's heterogeneous compute engines. Patented SiMa.ai ML compiler along with highly optimized kernels extract optimal performance automatically. The automation of the build process takes the housekeeping away from the developer so they can focus on the ML application logic.

Deploy and easily manage application packages on the SiMa.ai MLSoC using the Palette's Device Manager. Packages enable a highly scalable workflow for both testing and operational deployment. Security options provide protection of the deployed application packages on the SiMa.ai MLSoC target hardware.

Debug sessions, generate logs and profile applications in real-time. The software platform allows evaluation of multiple applications deployed across numerous MLSoC devices.

Model Compiler

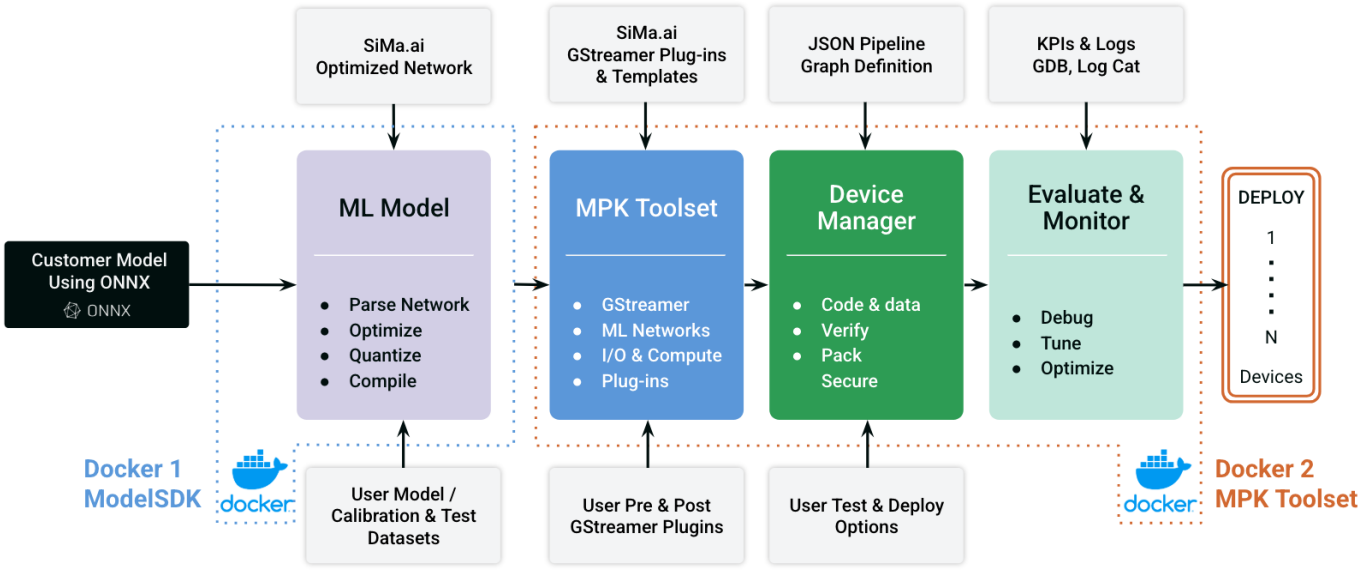
- Supports and optimizes DNN models including native support for GenAI models.
- Partition model across heterogeneous compute resources in the MLSoC.
- On-Device Mini-Pipeline API (C++ on eLXr Only) Mixed-precision support INT8 and BF16.

Model Library

Palette provides a reference library of models covering common DNN topologies. Each DNN model comes with detailed information about the reference, test, and calibration data used, model accuracy metrics, and key performance indicators. The Model Browser showcases performance benchmarks on select models running on MLSoC platform.

Application Development

- Library of application examples.
- Library of pre and post processing plugins gives a headstart on developing applications for most common use cases.
- Data ingestion plugins to process various kinds of data.
- Supports up-to 16 camera streams.
- Build complete workflow/application and validate on the SiMa.ai MLSoC board.
- Collect application statistics and logs.



Application Libraries

Palette features a reference library of ML applications targeting various use cases in different targeted markets. With Palette, the user can replicate functionality and modify the workflow to quickly iterate on new ML applications.

Device Manager

- Secure communication to MLSoC boards.
- Verify and package applications and all required resources.
- Execute and analyze applications on silicon.
- Deployment and maintenance.

Debug and Profiler

- Multi-core MLSoC GDB debug.
- LogCat and PerfCat options.
- Visualize application pipeline execution flow.
- Palette runs on Linux, Windows and Mac.

Contact info@sima.ai for deployment options.

About SiMa

SiMa.ai is a leader in Physical AI, delivering a purpose-built, software-centric platform that brings best-in-class performance, power efficiency, and ease of use to Physical AI applications. Focused on scaling Physical AI across robotics, automotive, industrial automation, aerospace & defense, smart vision, and healthcare, SiMa.ai is led by seasoned technologists and backed by top-tier investors. Headquartered in San Jose, California.
Learn more at www.sima.ai.