Stellar StudioAI

Data brief

Artificial intelligence (AI) plug-in for automotive STELLAR E MCUs

Product status link
StellarStudioAI

Product summary	
Order code	StellarStudioAI
Reference	Artificial intelligence (AI) plug-in of the StellarStudio development environment, for Stellar electrification (E) MCU series

Features

- Automatic conversion of pretrained neural network into optimized Ansi C code, ready to be compiled
- Supports:
  - Keras
  - TensorFlow lite
  - ONNX
- Provides neural network performance report and validation
- Integration with StellarStudio
- Full graphical conversion process: no "C" development skills required
- Supports Stellar electrification (E) MCU series:
  - Real-time computing power 32-bit CPU Arm Cortex® M7 300 MHz
  - Tailored for OBC–DCDC – traction inverter
  - Fast sensing and actuation
  - SiC/GaN enabler
  - Math accelerator
  - Scalable real-time performances
  - Flash: up to 2 Mbyte
  - Security: Evita medium with low latency HSM
  - Safety up to ASIL-D
  - ISO 26262 ready
  - ISO 21434 ready
  - OTA hardware support
- Evaluation boards available for fast evaluation

Description

StellarStudioAI is the artificial intelligence (AI) plug-in of the StellarStudio development environment, supporting the Stellar electrification (E) MCU series. Its primary objective is to empower neural network architectures by providing a seamless platform for generating, executing, and validating pretrained neural network models on automotive MCUs.

The core functionality of StellarStudioAI lies in its ability to automatically generate pretrained neural networks and convert them into efficient "Ansi C" libraries. These libraries can be easily compiled, installed, and executed on Stellar E MCU series devices. Importing pretrained neural networks is made convenient through the integration of widely used deep learning frameworks such as Keras, TensorFlow lite, and ONNX.

For advanced embedded developers, this plug-in offers the flexibility to import the generated library into more complex application-specific projects, thanks to a well-defined short number of public APIs.

1 Get software

To get the software, refer to ST local representative.

Revision history

Table 1. **Document revision history**

Date	Revision	Changes
28-Sep-2023	1	Initial release.

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