

Fast inference in CMSSW with NVIDIA TensorRT

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Day 3

Day 3 scrum

- Installed the latest release of NVIDIA TensorRT (TRT 6.0.1.5) within CMSSW environment as external: **compiles!**
- `PatternRecognitionByCA` inside T1CL framework adapted to work with TensorRT instead of TensorFlow
- **Issues:** deprecated documentation & libraries

Plans for *tomorrow*: have it working in CMSSW (need to convert Tracksters to data structures)

Day 2

Day 2 scrum

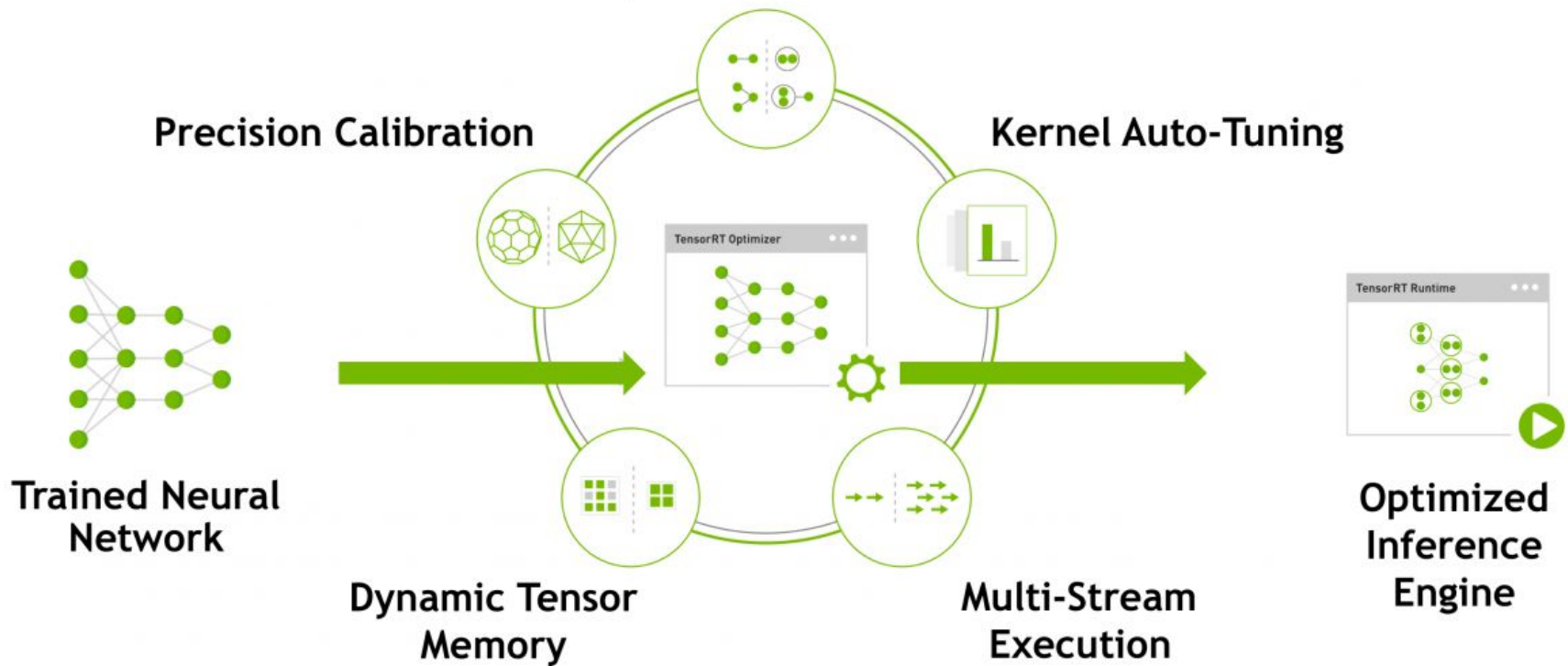
- Installed the latest release of NVIDIA TensorRT (TRT 6.0.1.5) within CMSSW environment as external: **compiles!**
- Adapting `PatternRecognitionByCA` inside T1CL framework to work with TensorRT instead of TensorFlow (need to cope with multiple outputs)
- **Issues:** deprecated documentation & libraries
 - If not maintained not worth to put TensorRT in production
- Plans for *tomorrow*: have a **simplified working** TensorRT example in CMSSW for PiD & energy regression

Day 1

Goal

- Integrate fast inference in CMSSW on GPU with **NVIDIA TensorRT**:
<https://developer.nvidia.com/tensorrt>
- NVIDIA TensorRT is a platform for high-performance deep learning inference. It includes a deep learning inference optimizer and runtime that delivers low latency and high-throughput for deep learning inference applications.
- Test the performance on the model developed for Particle ID and Energy Regression in HGAL within TICAL framework.

Layer & Tensor Fusion



Day 1 scrum

- Installed the latest release of NVIDIA TensorRT (TRT 6.0.1.5) within CMSSW environment
- Verification still ongoing
 - Apparently the tool for the conversion of .pb model into .uff model is not working
 - Testing is being made on a code that worked with TRT 4.0 outside CMSSW for doublets classification in the Tracker
- A simple code will be written to work with the new problem (ParticleID and EnergyRegression in HGAL)
- Need to adapt **PatternRecognitionByCA** inside TIGL framework to work with TensorRT instead of TensorFlow