Choose the Best Accelerated Technology

Intel® AI Analytics Toolkit

Kevin Ta

AI Software Solutions Engineer, Intel

Agenda

- Overview
- Data Analytics & Classical Machine Learning
  - Intel® Distribution of Modin
  - Intel® Extension for Scikit-Learn
  - Intel® Distribution of XGBoost
- Deep Learning
  - Intel® Optimization for TensorFlow*
  - Intel® Optimization for PyTorch*
  - Intel® Neural Compressor

Intel® oneAPI Toolkits

oneAPI

Intel® oneAPI Base Toolkit

A core set of high-performance libraries and tools for building C++, SYCL, C/OpenMP, and Python applications

Add-on Domain-specific Toolkits

For HPC developers

Intel® oneAPI Tools for HPC
Deliver fast Fortran, OpenMP & MPI applications that scale

For visual creators, scientists & engineers

Intel® oneAPI Rendering Toolkit
Accelerate visual compute, deliver high-performance, high-fidelity visualization applications.

For edge & IoT developers

Intel® oneAPI Tools for IoT
Build efficient, reliable solutions that run at network's edge

Toolkits powered by oneAPI

For AI developers & data scientists

Intel® AI Analytics Toolkit
Accelerate machine learning & data science pipelines end-to-end with optimized DL & ML frameworks & high-performing Python libraries

OpenVINO™

For deep learning inference developers

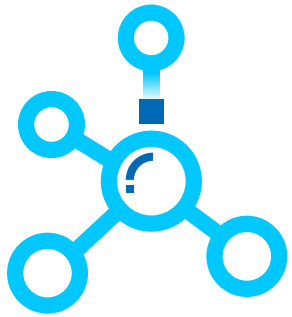
Intel® OpenVINO™ toolkit
Deploy high performance inference & applications from edge to cloud

Download at **intel.com/oneAPI**
Or visit Intel® DevCloud for oneAPI

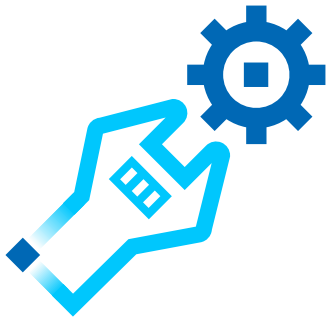
Latest version available 2023

Intel's AI Software Objective

Simplify our AI developers' lives regardless of how they consume the software



Open source, common software programming model



End-to-end tools and kits to help accelerate time-to-solution

Meet developers where and how they use software

Intel Has the Developer Tools Companies Use to Scale AI Everywhere

Upstream

Integrated acceleration to popular open source software

Modin, XGBoost, TF, PT, PDPD, MxNet, more ...

Intel Extension

Easily pluggable extensions to open source software

Scikit-Learn Extension, Optimized Analytics Package, IPEX, more ...

Intel Distro

Intel Optimized Distributions of open source software

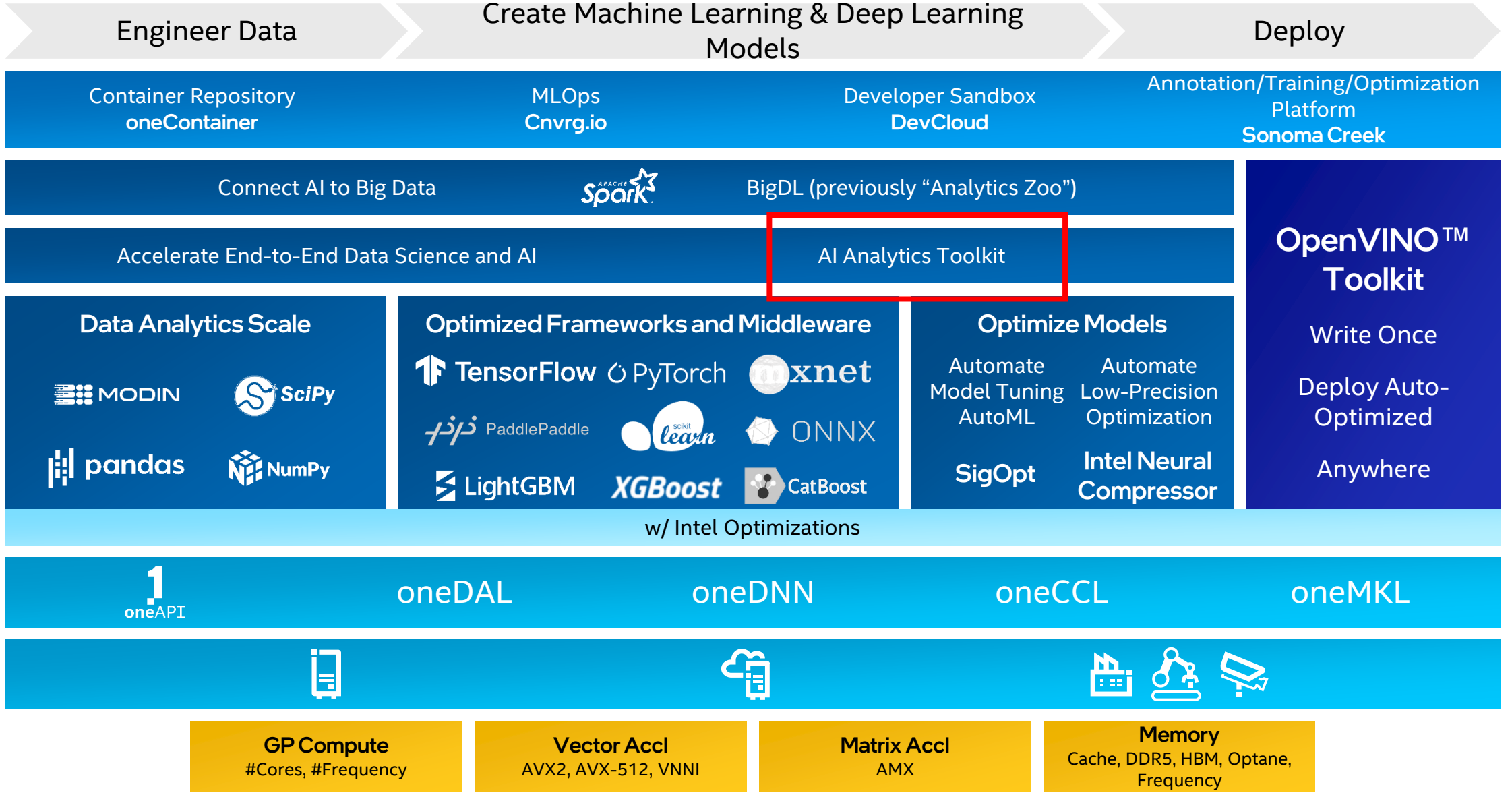
Modin, Intel TF, IDP

Intel Tools

Tools / Kits which improve productivity and perf on Intel HW

AIKIT, OpenVINO™, BigDL, oneContainer Portal, Cnvrg.io, Intel Neural Compressor, SigOpt,

Across major software channels (PyPI, Anaconda, Intel, Apt, Yum, Docker)



Intel® AI Analytics Toolkit

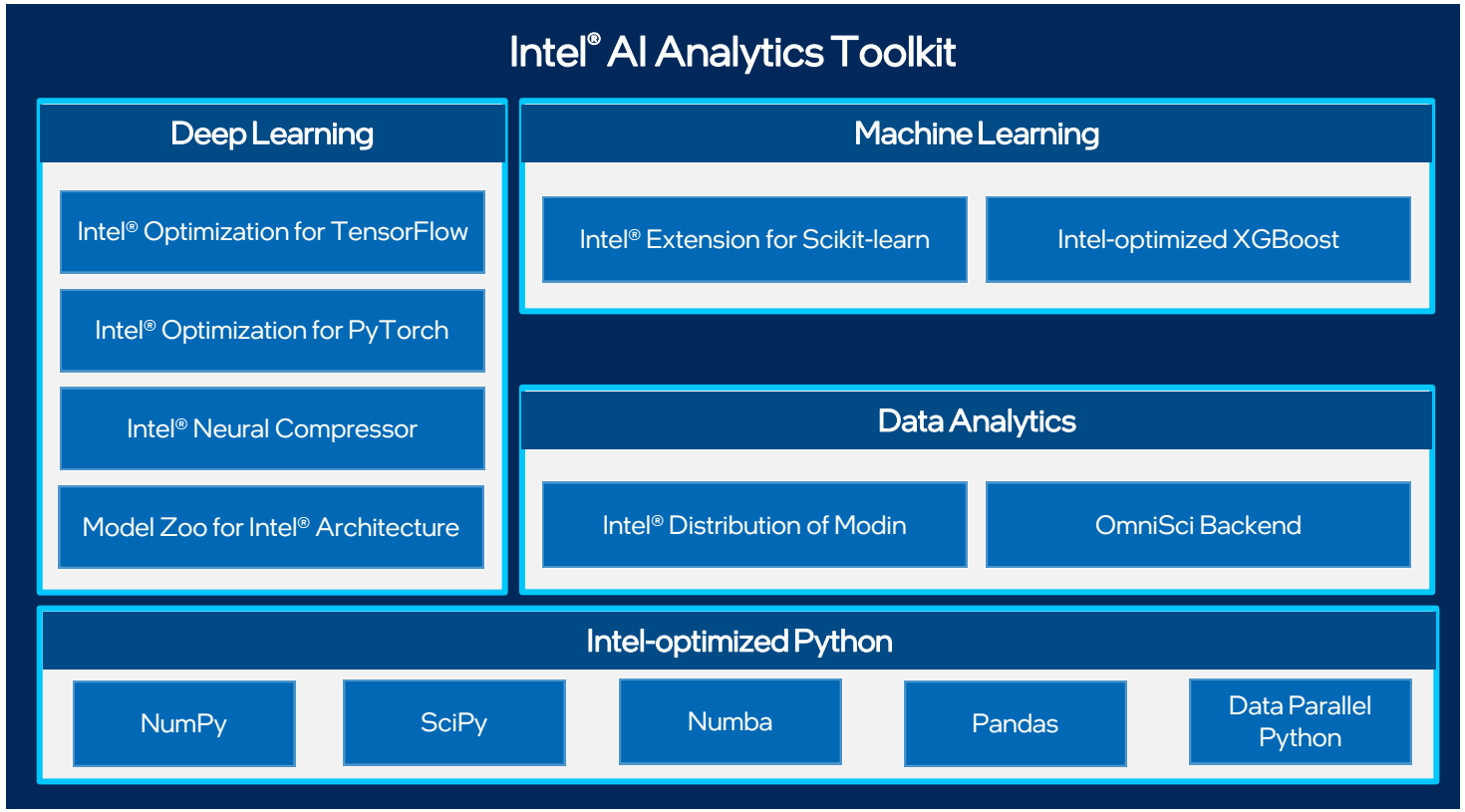
Accelerate end-to-end AI and data analytics pipelines with libraries optimized for Intel® architectures

Who needs this product?

Data scientists, AI researchers, ML and DL developers, AI application developers

Top Features/Benefits

- Deep learning performance for training and inference with Intel optimized DL frameworks and tools
- Drop-in acceleration for data analytics and machine learning workflows with compute-intensive Python packages



CPU GPU

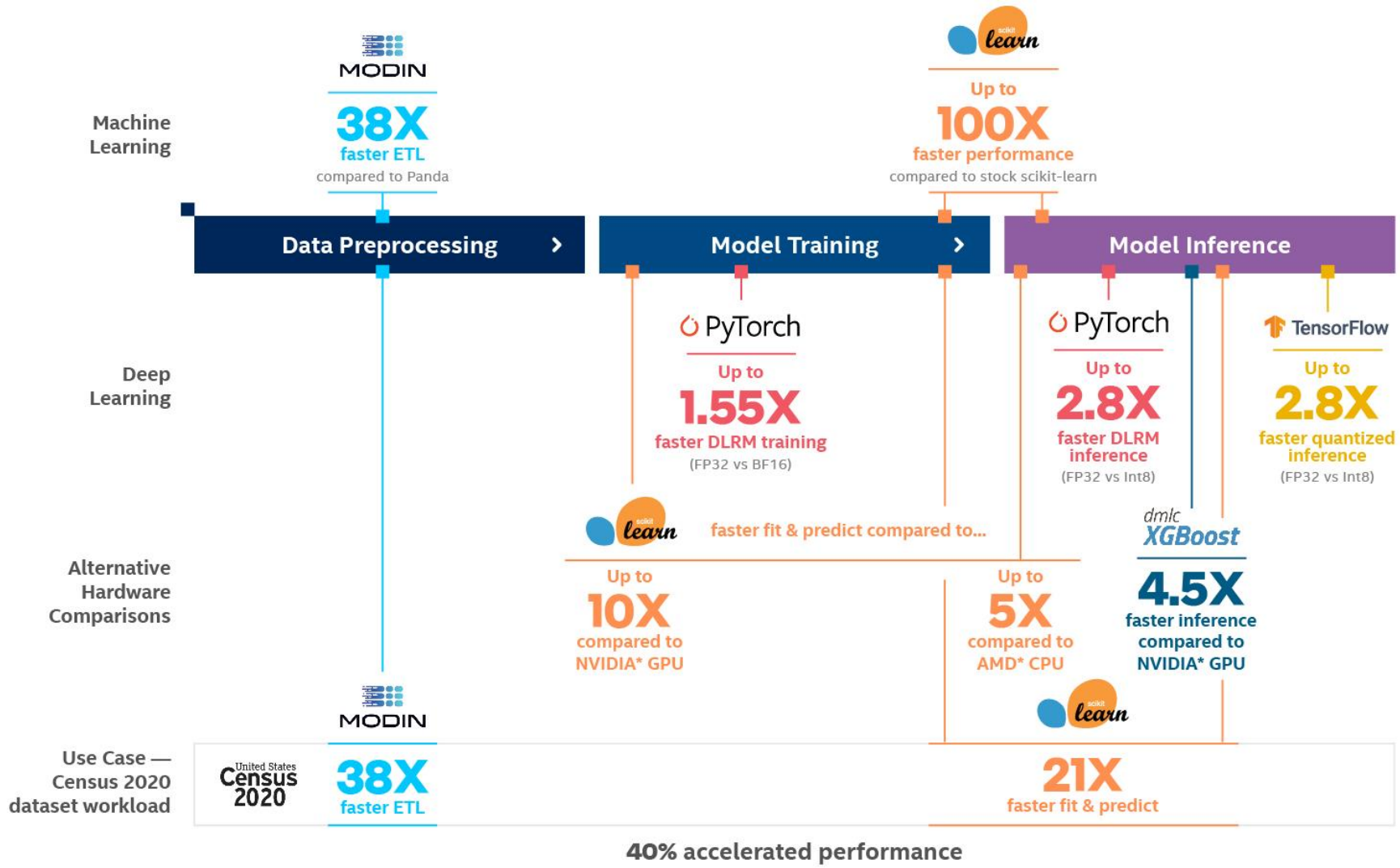
Hardware support varies by individual tool. Architecture support will be expanded over time.

Get the Toolkit HERE or via these locations

Intel Installer | Docker | Apt, Yum | Conda | Intel® DevCloud

Back to Domain-specific Toolkits for Specialized Workloads

Combine the AI Kit optimizations across the data science pipeline!



*Performance improvements shown here are based off hardware running on Intel Cascade Lake processors. This chart will be updated once data from Ice Lake is available. See backup for workloads and configurations. **Results may vary.**