Accelerate Data Science Operations with Workstations Powered by Intel

Planning and Conceptualizing

All AI solutions start with data science.

Intially, much of the planning and conceptualizing of an AI solution can take place anywhere—even in a coffeeshop.

A properly configured laptop, powered by an Intel Core processor, can accomplish this kind of work.

A suitable mobile workstation can do even more (including the tasks shown in the next panel if the datasets aren't too large).

Mobile workstation configured for a data scientist: Single-socket Intel® Core™ i9 - 10900k processor, 3.7 GHz, 10 cores/20 threads.

Data Preparation, Model Evaluation, Data Exploration

Workstations tailored to tasks key to data scientists can accelerate operations and streamline workflow. This includes data exploration; extract, transform, and load (ETL) operations; model evaluation; and visualization tasks.

In the earliest phase of AI solution development, large datasets must often be ingested and added to the workflow. These can range in size from hundreds of gigabytes to multiple terabytes.

Cloud computing and GPU architectures don't effectively handle core tasks. Workstation capabilities, including expansive memory capacities, data locality, and low latency data handling, are vital to efficient workflow.

Recommended mid-tier workstation: Single-socket Intel Xeon® W 2295 processor, 3.0 GHz, 18 cores/36 threads, 512 GB memory, 2 TB SSD.

A top-tier workstation can handle the most demanding applications that require an expansive memory span.

Recommended top-tier system: Dual-socket Intel Xeon Gold 6258R processor, 2.7 GHz, 28 cores/56 threads, 1 TB memory, 2 TB SSD.

To maximize memory capabilities, substitute an Intel Xeon Gold 6240L processor and Intel Optane™ Persistent Memory 200 Series modules.

Tasks in this phase take up a very large portion of the development effort.

Intel complements this line-up of workstations with software tools optimized for the hardware, including Intel oneAPI toolkits, featuring Intel Distribution for Python, Intel AI Analytics toolkit, and other domain-specific oneAPI toolkits.

Hand-off to Production Engineering

Once the AI solution ingredients are tested and validated, the Final Phase of the AI solution development is the hand-off to the production engineering team for final model training and deployment.

Data scientists have a broad choice of workstation solutions that improve workflow, accelerate data science tasks, and help build AI solution faster. Take advantage of the tuned and optimized hardware and software components available to build exceptional AI solutions.

Find out more about Intel's commitment to enhancing the AI journey for data scientists at software.intel.com/ai.