What do data scientists need?
Data scientists occupy a unique role within development teams building AI solutions. At the start of any AI project, the data preparation, model evaluation, preprocessing, and data exploration are the core tasks.

Developing the AI model is a patient, iterative, thoughtful process—including testing different strategies and models, and predicting performance.

Data scientists need frameworks and applications that excel at data exploration; extract, transform, and load (ETL) operations; and visualization tasks, favoring single-node deployments.

Interacting with massive datasets and maintaining a single-node memory span rule out cloud deployments. Workstations enabled for data locality minimize latency issues.

builders.intel.com/ai

Build the ultimate workstation geared to data science efforts
Data scientists require highly interactive systems that can handle massive volumes of data, using tools designed for single-node processing. The Initial Phase in the workflow (see Figure 1) occupies about 80% of the overall effort and benefits from a workstation optimized for key tasks. The Intel portfolio offers hardware, software, libraries, accelerators, frameworks, and toolkits with the ideal capabilities for data science projects.

Choose purpose-built hardware for specialized data science tasks
A slate of processors infused with AI capabilities power the workstations offered by Intel, coupled with persistent memory options and fast SSDs. Compared to high-performance computing cluster nodes or premium laptops, workstation memory and drives can be effectively configured for larger volumes of data.

Capitalize on open standards and a cross-architecture development platform
OEMs and system integrators providing workstations configured for data scientist requirements can take advantage of optimized open standards software tuned for AI acceleration. System building is streamlined by toolkits that support a unified programming model to deliver powerful, cross-platform interoperability.

Take advantage of extensive ecosystem resources
Minimize the cost and complexities of designing AI solutions for data scientists by tapping into a vast array of resources provided by the dynamic ecosystem of the Intel® AI Builders program. Members gain access to tools and technologies to accelerate AI adoption and opportunities for co-marketing and matchmaking with technology leaders. Learn more at builders.intel.com/ai.

Earn the trust and confidence of data scientists by offering workstation solutions keyed to their requirements.
Guidelines for building those workstations appear on page two.
Successful AI solutions are grounded in hardware. Intel® Xeon® processors and Intel Core™ processors power workstations with deep capabilities for diverse uses. No GPU required.

OEMs and systems integrators selling to the data science sector have a unique opportunity to offer purpose-built workstations that are cost effective and scale to ingest massive datasets.

Mobile workstations
Configuration for data science enthusiasts:
Single-socket Intel Core i9 -10900k processor, 3.7 GHz, 10 cores/20 threads
- Cache sizes: 20 MB, 2.5 MB, 320 KB
- 128 GB memory (4 x 32 GB)
- 2TB SSD

Primary use cases
Best for basic data science projects, meeting baseline memory and storage requirements for budget-sensitive uses. Intel Core processors excel where workloads scale with raw clock speed (not requiring AVX-512 speeds).

Approximate price as configured: USD 6,000

Mid-tier workstations
Balanced core count and frequency:
Single-socket Intel Xeon W 2295 processor, 3.0 GHz, 18 cores/36 threads
- Cache size: 24.75 MB, 18 MB, 1 MB
- 4 memory channels
- 512 GB memory (8 x 64 GB)
- 2 TB SSD
- Intel Optane™ SSD 905P Series (960 GB) (AIC PCIe x 4 3D XPoint)

Primary use cases
Achieves an equitable balance between core count and processor frequency, providing cost-effective performance within moderate heat and power parameters.

Approximate price as configured: USD 16,000

Top-tier workstations
Demanding applications with broad memory span.
Dual-socket Intel Xeon Gold 6258R processor, 2.7 GHz, 28 cores/56 threads
- Cache size: 38.5 MB, 28 MB, 1.75 MB (Intel Xeon processor L2/L3 cache hierarchy)
- 1024 GB (1 TB) memory (16 x 64 GB DDR4 ECC RDIMM)
- 2 TB SSD

Primary use cases
Suits applications in which requiring the memory span exceeds 3 TB, ranging as high as 6 TB. Also favors applications in which server-based optimization and core scaling are essential. This configuration requires balancing benefits against the available power budget.

Approximate price as configured: USD 30,000

The workstation configurations and use cases shown are a representative sampling. Explore other choices at Workstations Powered by Intel.

Intel's commitment to enhancing the AI journey for developers extends from the cloud to the edge and to end devices.

To discover ways to improve the AI journey for customers, visit builders.intel.com/ai.