| Feature | CPU | GPU |
|---|---|---|
| Full Form | Central Processing Unit | Graphics Processing Unit |
| Architecture | General-purpose | Specialized for parallel processing |
| Cores | Typically fewer cores (e.g., 2-8) | Larger number of cores (e.g., hundreds or thousands) |
| Clock Speed | Higher clock speeds | Lower clock speeds compared to CPUs |
| Instruction Set | Complex, optimized for sequential tasks | Simplified, optimized for parallel tasks |
| Cache | Larger cache per core | Smaller cache per core |
| Memory | Lower memory bandwidth | Higher memory bandwidth |
| Power Efficiency | More power-efficient | Less power-efficient, but optimized for high-performance computing |
| Task Execution | Executes complex tasks sequentially | Executes multiple simple tasks simultaneously (parallel processing) |
| Software Compatibility | Runs a wide range of software applications | Primarily designed for graphics-intensive applications |
| Use Cases | General-purpose computing tasks | Graphics rendering, gaming, machine learning, scientific computing, etc. |

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