"The Machine" or "The System Architecture"

- Instruction Set Architecture
- Microarchitecture
- Microprocessors
- Memory Systems
- Buses
- Disk Systems
- NICs, …
- Memory
- Combinational Logic
- Transistors
- Semiconductors and photolithography
- Classical Physics
- Quantum Physics
- Chemistry
- Compiler Toolchains To Make This Easier
Program

Compiler Toolchain Operating System Network Stack

Programming Language Libraries Virtual Environment (processes, threads, virtual memory, I/O, signals)

Object Code (assembler)

Exception

System Architecture

Instruction Set Architecture Microarchitecture Memory System Buses, Disk, NICs, etc

Distributed systems

Interop Standards

Compiler Toolchains (CORBA)