

AI Layered Systems

Abstract

Computers have come a long way over the years, evolving from manual programming methods to advanced AI-driven systems. This document looks at how computing layers have changed over time—past, present, and future—highlighting key improvements and the growing role of AI in shaping the next generation of computing.

1. Computing 50 Years Ago

Half a century ago, computers were much simpler, but they laid the foundation for modern computing. Programmers had to manually write and store hex codes, which were then executed by the hardware. There was no automation—everything was done by hand, making the process slow and labor-intensive.

Layers in Early Computing:

Human with Program Diary → Code → Hardware

2. Present-Day Computing (2025)

Today's computers are far more sophisticated. Operating systems, application software, and automated code assemblers handle a lot of the work, making things easier and more efficient. Developers have access to debugging tools, simulators, and assistive technologies, reducing manual effort and speeding up development.

Layers in Present-Day Computing:

Human Interface → Application Software → Operating System → Code Assembler → Hardware

3. AI-Layered Computing

As AI continues to improve, computers will become even more advanced. Future systems will rely on AI-driven components like neural networks and AI kernels to handle code translation and execution automatically. Large Language Models (LLMs) will allow users to communicate with computers using natural language, removing the need for traditional programming languages. This will make coding more intuitive and accessible for everyone.

Layers in AI-Layered Computing:

Human Interface → AI Kernel → Neural Network & Decoder → Code Translator → Operating System-like Software → Code Assembler → Hardware

Advancements:

- AI will simplify programming by allowing natural language commands.
- AI-powered systems will be able to optimize hardware performance automatically.
- Neural networks will handle most of the coding, reducing the need for manual programming.
- AI-driven operating systems will improve efficiency and automation.
- The shift from manual coding to AI-driven computing is essential. Future systems will be more intuitive, efficient, and accessible, making it easier for people to interact with technology without needing deep programming knowledge.