# AI 芯片 — AI 计算体系

# 内容介绍

ZOMI

AI框架
TensorFlow　Sci-Kit Learn　CNTK　theano　Torch　MindSpore
自动微分、计算图
分布式并行、分布式算法

AI编译器
从LLVM传统编译器到AI编译器
前端、后端优化和PyTorch2.0
AI编译器 系列

推理引擎
模型小型化、模型压缩
离线转换、图优化、Kernel优化

# Talk Overview

**I. AI 计算体系**

- 深度学习计算模式

- 计算体系与矩阵运算

**2. AI 芯片基础**

- 通用处理器 CPU

- 从数据看 CPU 计算

- 通用图形处理器 GPU

- AI专用处理器 NPU/TPU

- 计算体系架构的黄金10年

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性能

CPU + GPU +
NPU/DPU/etc.

CPU +
GPU/NPU/etc.

多核 CPU/GPU

单核 CPU

第一阶段
单引擎
串行

第二阶段
单类型引擎
同构并行

第三阶段
两种类型引擎
异构并行

第四阶段
三种以上类型引擎
超异构并行

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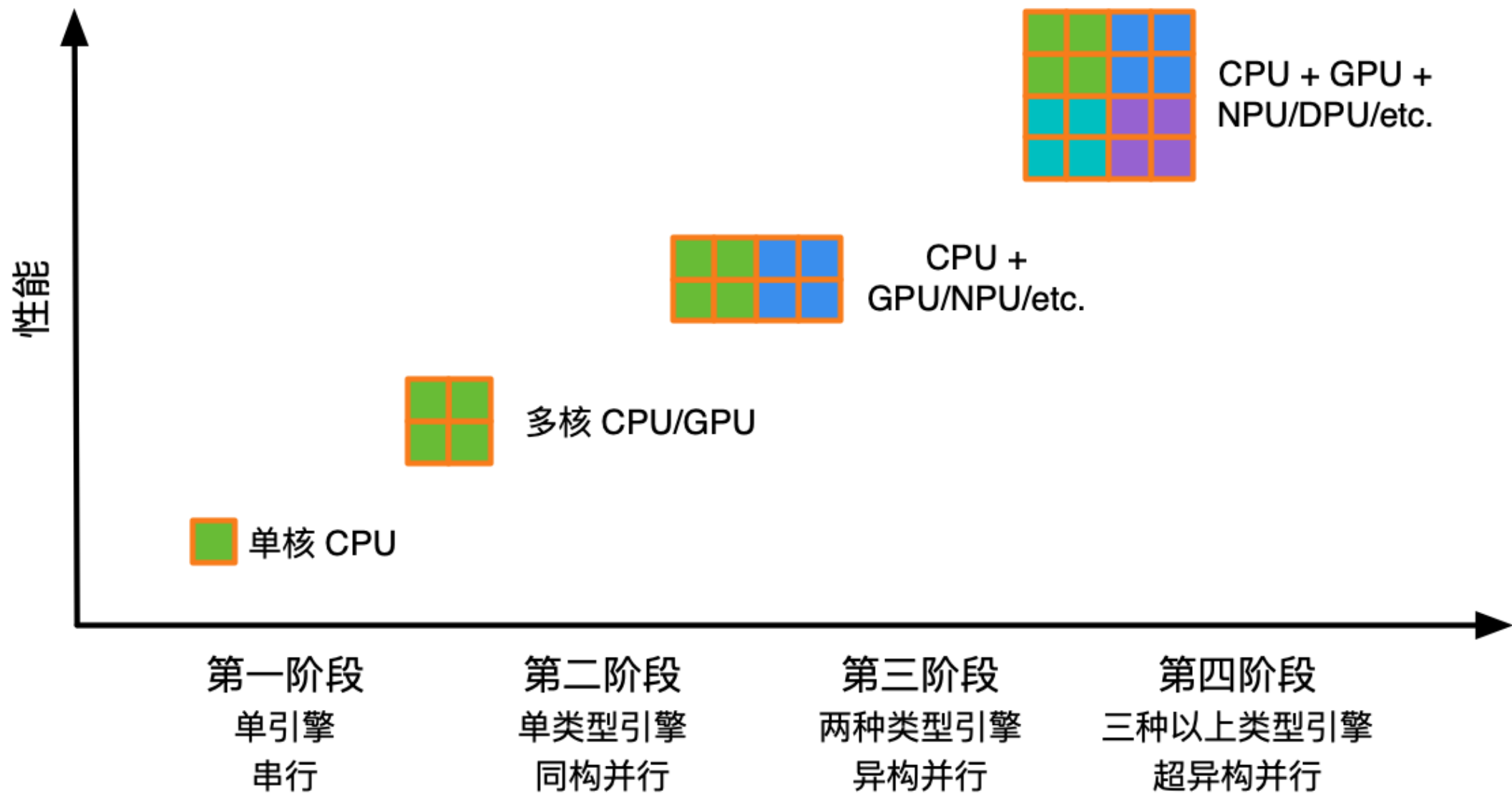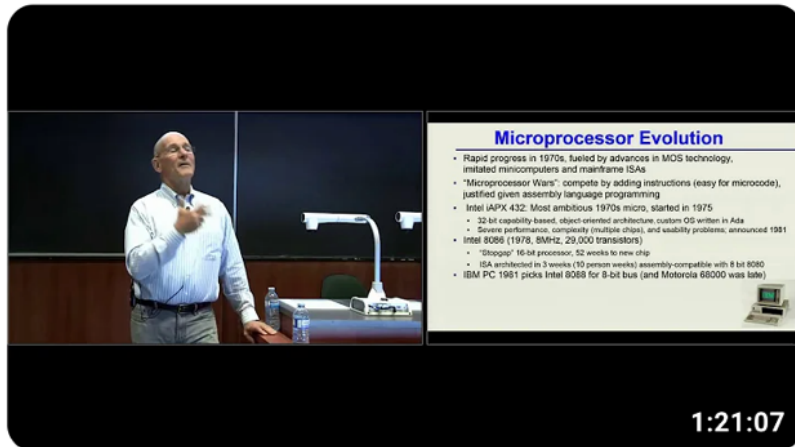
# Lessons of last 50 years of Computer Architecture

1. Software advances can inspire architecture innovations.

2. Ultimately the marketplace settles architecture debates.

3. Raising the hardware/software interface creates opportunities for architecture innovation.
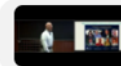


David Patterson - A New Golden Age for Computer Architecture: History, Challenges and Opportunities

7.1万次观看 · 3年前

UBC Computer Science

Abstract: In the 1980s, Mead and Conway democratized chip design and high-level language programming surpassed assembly ...

Turing Awards | What is Computer Architecture | IBM System360 | Semiconductors | Microprocessor... 44 个章节

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