中国科学院大学
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Parallel Computing and the Accelerators

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Introduction

- What are CPUs doing :
  - Branch Control
  - Memory Accessing
  - Computing

- Limited performance on computing intensive applications.

Introduction

- Accelerators:
  - Speed up the computing
  - Usually work along side the GPU.
  - Getting popular…

- Classes:

CPU GPU FPGA ASIC

Introduction

- CPU Accelerators:
  - Intel Xeon Phi
  - With up to 72 out-of-order cores,
  - over 3 tera FLOPS of double-precision
  - MIC

Introduction

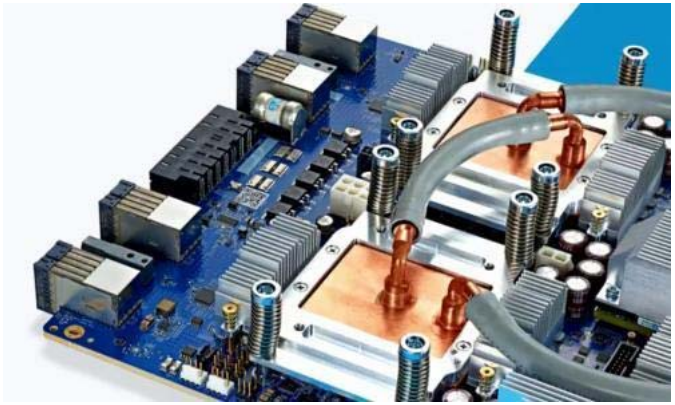
- GPU Accelerators:
  - Nvidia Tesla K80
  - AMD Radeon

Introduction

- FPGA Accelerators:
  - **Xilinx**
  - **Altera**

Introduction

- ASIC Accelerators:
  - Google TPU
  - TPU 3.0 for AI
  - Work with **TensorFlow**
  - Up to **100PFlops**



Introduction

- ASIC Accelerators:
  - 寒武纪 **NPU**