## Hardware Acceleration

A Study by Jaymes Sullivan

### Hardware Acceleration Concept

- CPUs are general purpose
  - Good but not great... Unless you spend \$\$\$
  - Designed around being able to handle all code
  - Still 100% necessary
- Introducing Hardware Accelerators
  - Help a CPU out would ya?
  - Offloads code from the CPU
    Lets implement a specific architecture that takes this code
    - & is really good at han<u>dling it.</u>





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### I Mentioned Versatility

#### • GPUs themselves are purpose built

- Mobile
- Workstation
- PC
- Laptop
- HPC

## Other areas of applications

- Neural Networks
- Brain Simulation
- Machine Learning
- SoCs
- Physics Processing
- Mathematics
- Cryptography
- Signal Processing
- Data Management

# FPGAs and ASICs fit these applications

Field Programmable Gate Arrays





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