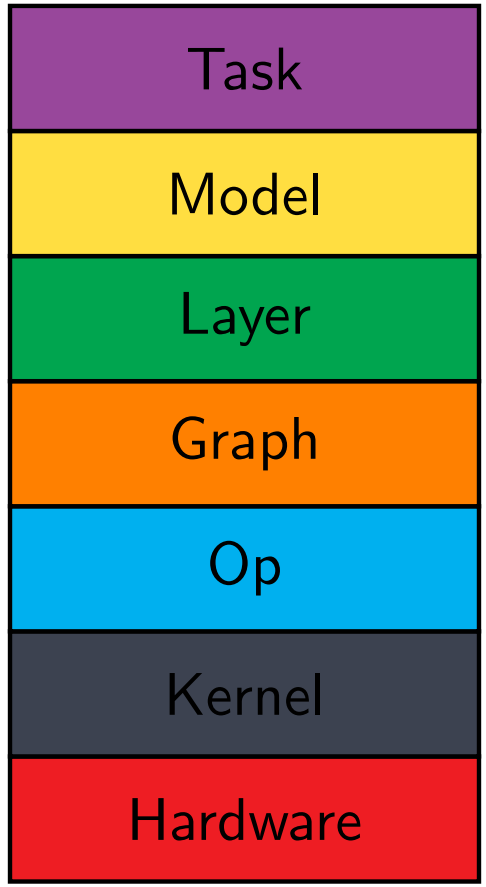
```
>>> c++ deep-learning.cpp

>>> ./a.out data.csv

>>> 42
```

Strategy



OSI Model of Machine Learning

Hardware: GPU

NVIDIA Stock

Deep Learning Trend

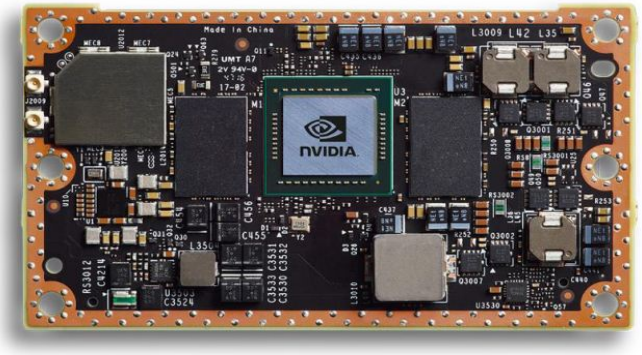
Hardware: GPU

Hardware: GPU

Titan X

Hardware: GPU

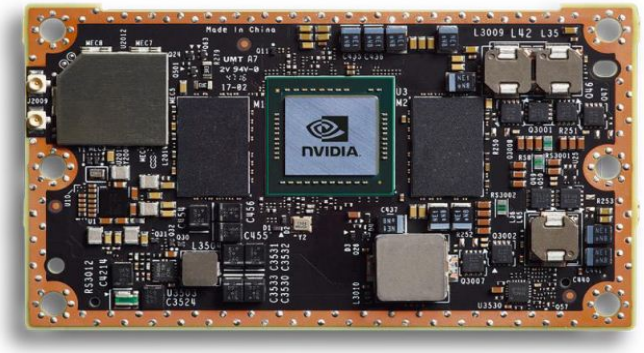
Titan X



Jetson TX2

Hardware: GPU

Titan X



Jetson TX2

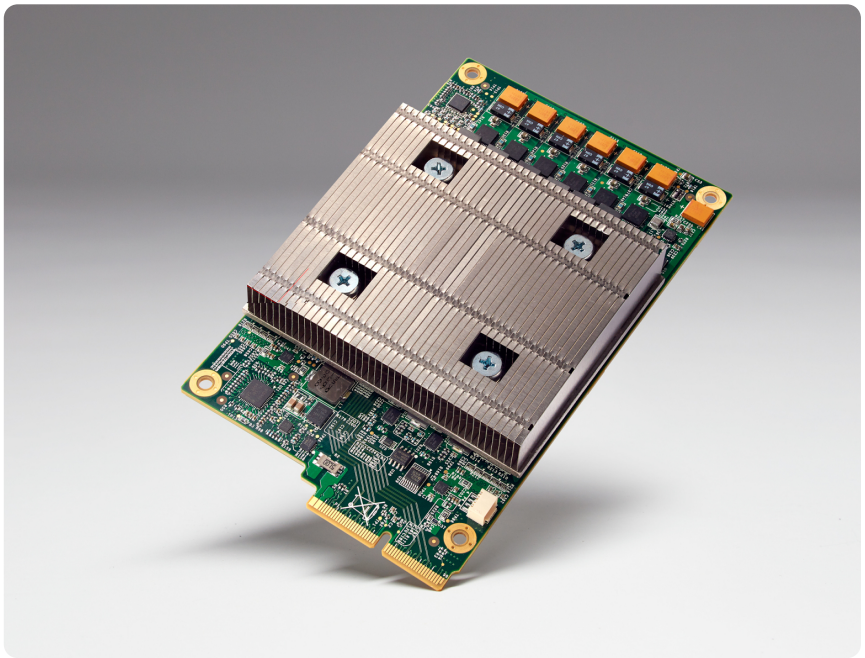
DGX-1

Hardware: Big Basin

Big Basin

- 8 NVIDIA Tesla P100 GPUs
- NVLink (12x faster than PCIe)
- 16 GB RAM
- 10.6 TFLOPS
- Reduced Precision Computing

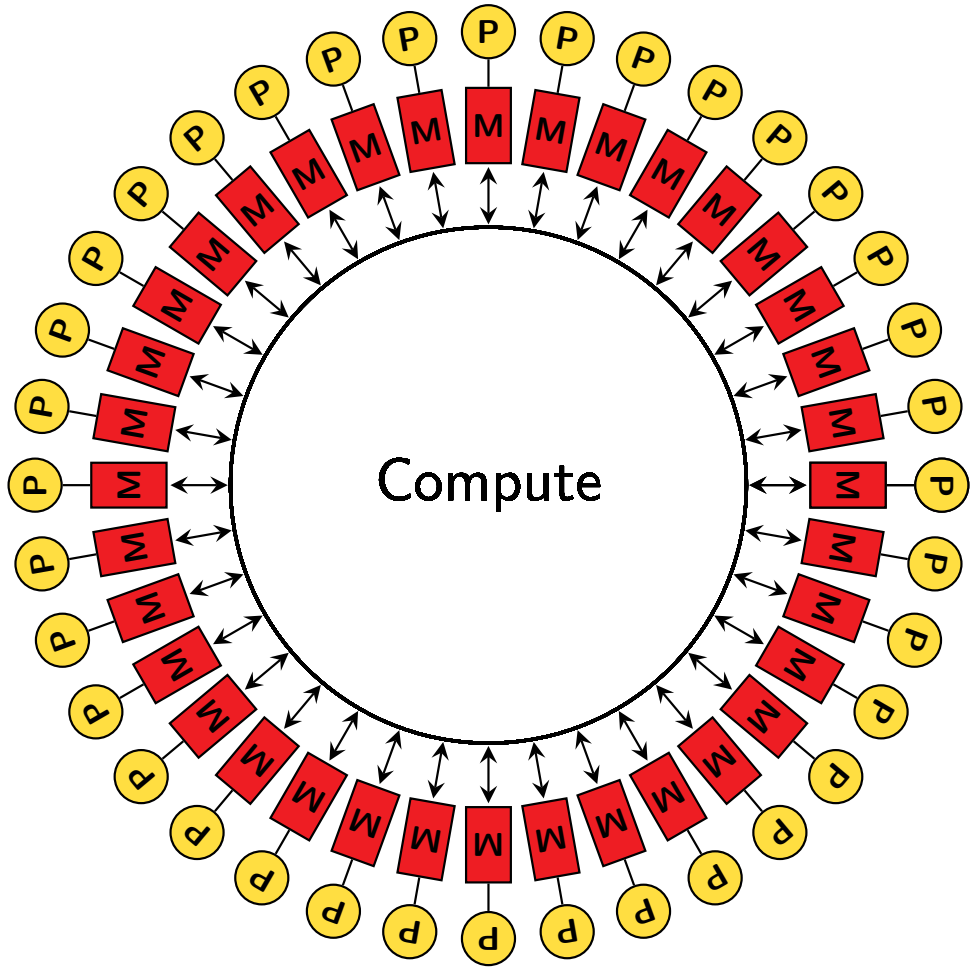
Hardware: TPU



TPU

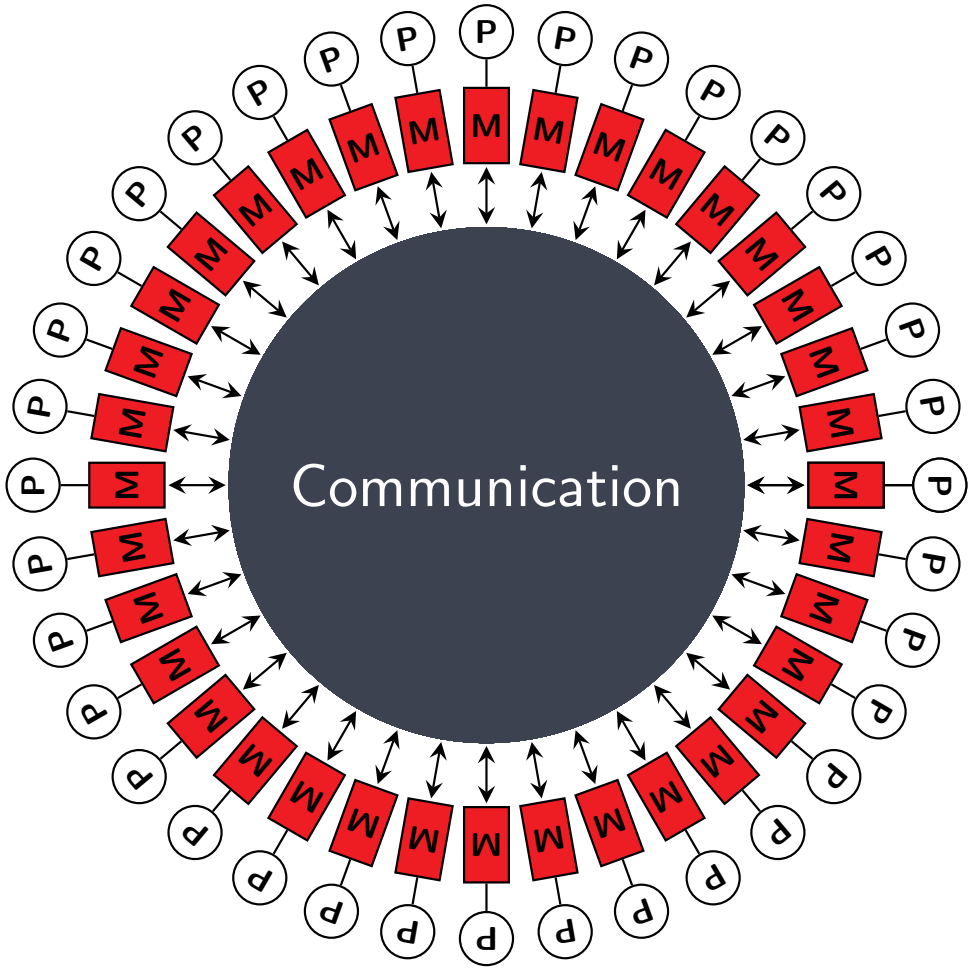
- *Coprocessor*
- 92 TOPS for 8-bit int
- 42 TFLOPS (TPU2)
- 24 MB Memory

Hardware: IPU



Bulk Synchronous Parallelism

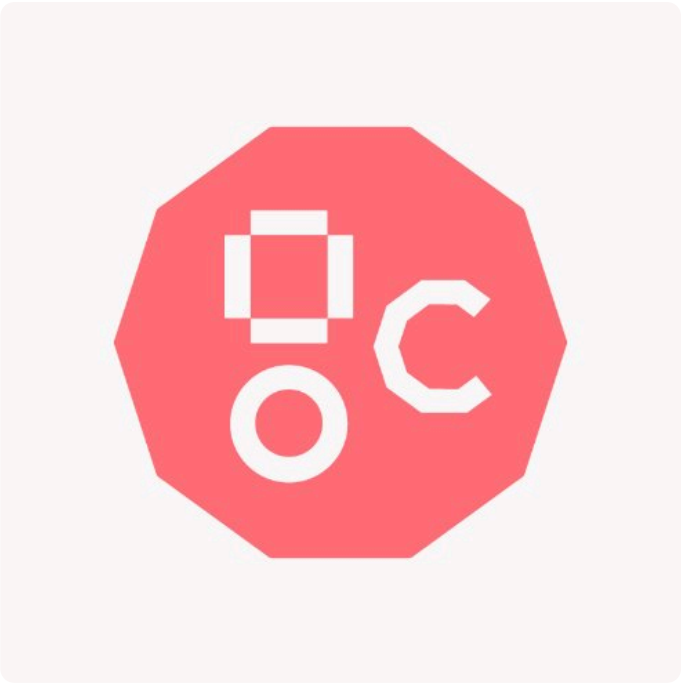
Hardware: IPU



Bulk Synchronous Parallelism

Hardware: IPU

- Startup from Bristol (UK)
- Graphcore Colossus
- TBR later this year
- 1000 Processors/Chip
- Mixed Precision Arithmetic
- No DRAM
- "Thrives on Sparsity"



Graphcore