Practical ML Tutorial: Part II

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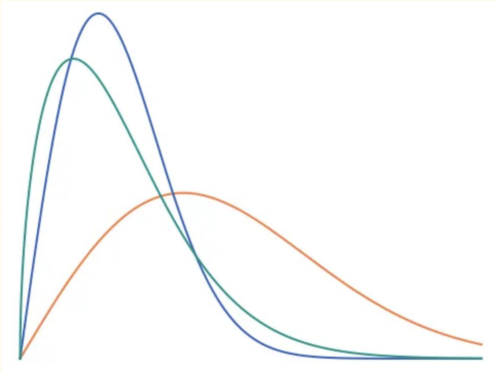
SEEMAPLD2023, George Williams

Agenda

Part I

- AI Trends
- ML Basics
- Survival Analysis
- Hands-On Programming



Part II

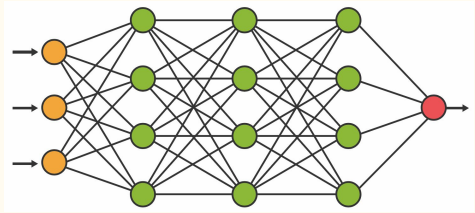
- AI Hardware
- PyTorch Basics
- Computer Vision
- Hands-On Programming

AI & ML Hardware

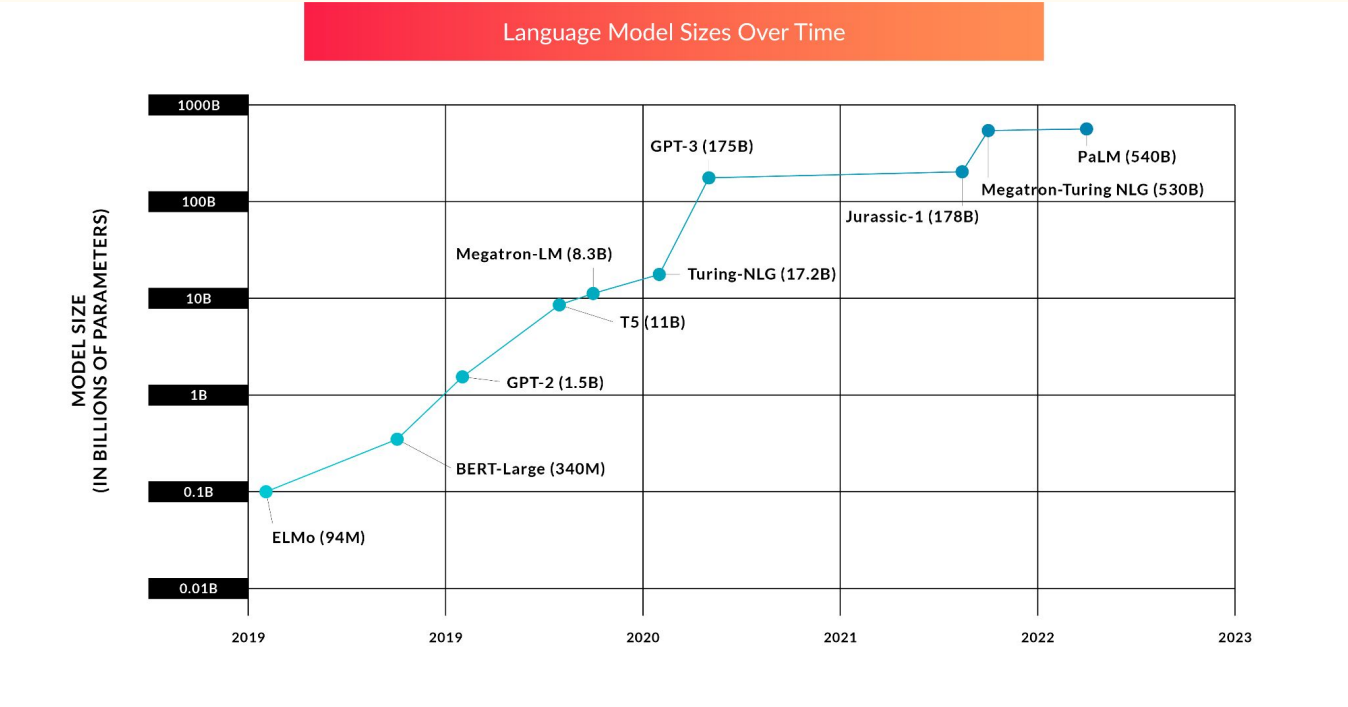
Extreme Industry Divergence...

Tiny ML

Large ML

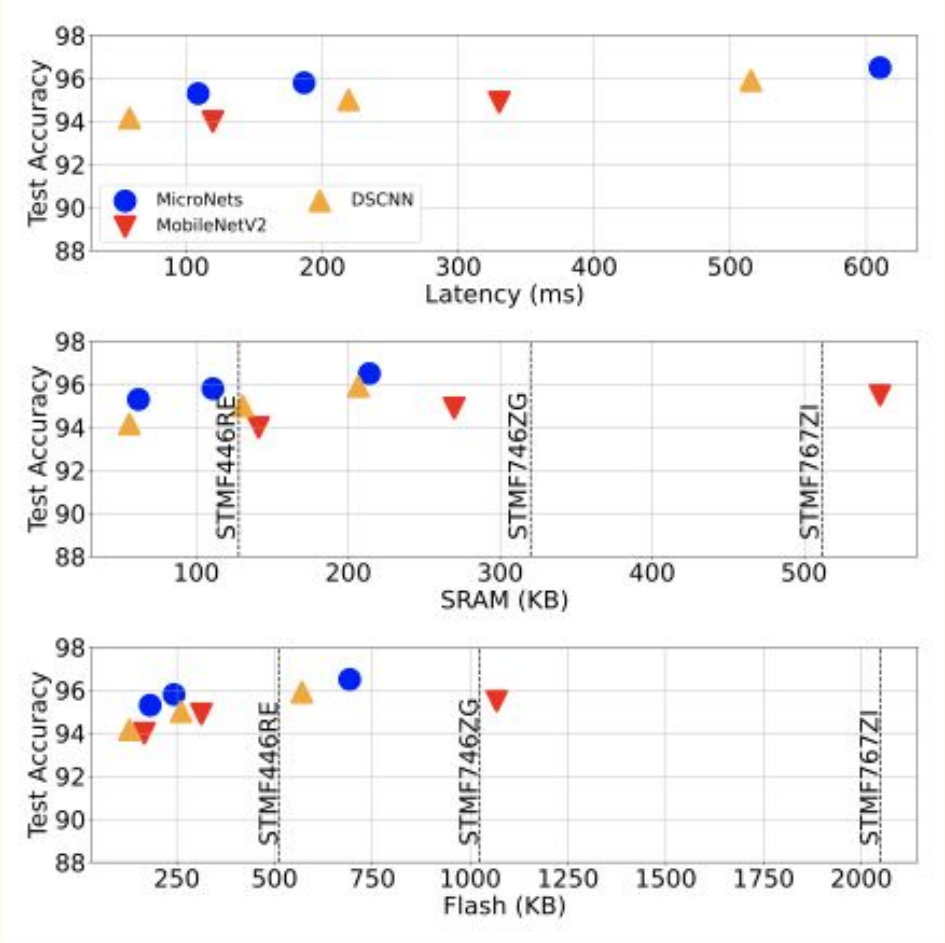


Large ML: Large Language Models



https://twosigmaventures.com/blog/article/the-promise-and-perils-of-large-language-models/

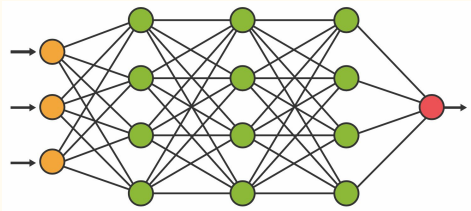
Tiny ML: AI At The Edge



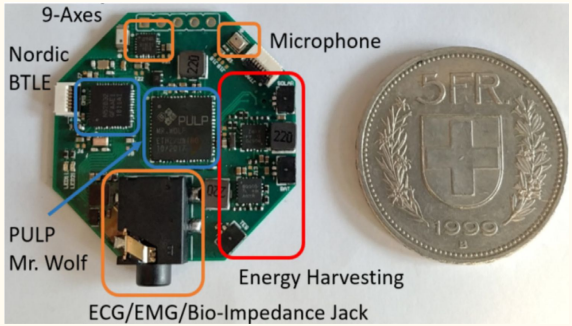
https://community.arm.com/arm-research/b/articles/posts/neural-network-architectures-for-deploying-tinyml-applications-on-commodity-microcontrollers

Extreme Hardware Divergence...

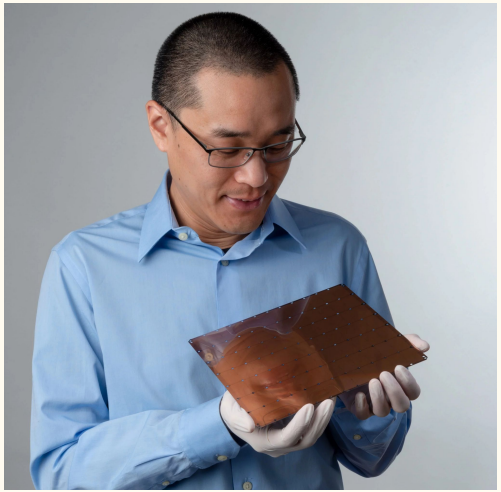
Tiny ML



Large ML



InfiniWolf Deep Learning on MCU



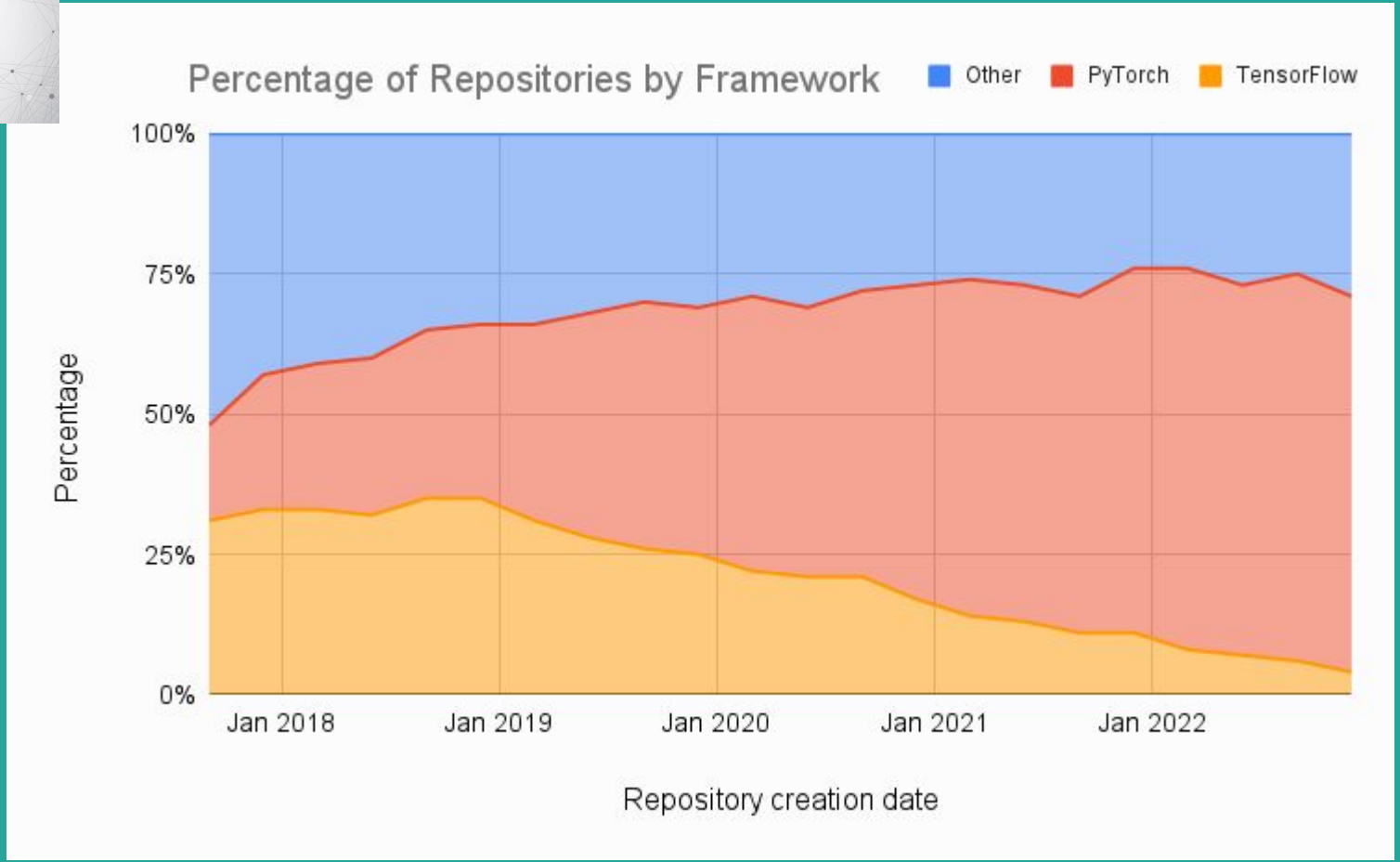
Cerebras Wafer-Scale for Deep Learning

Deep Learning Frameworks

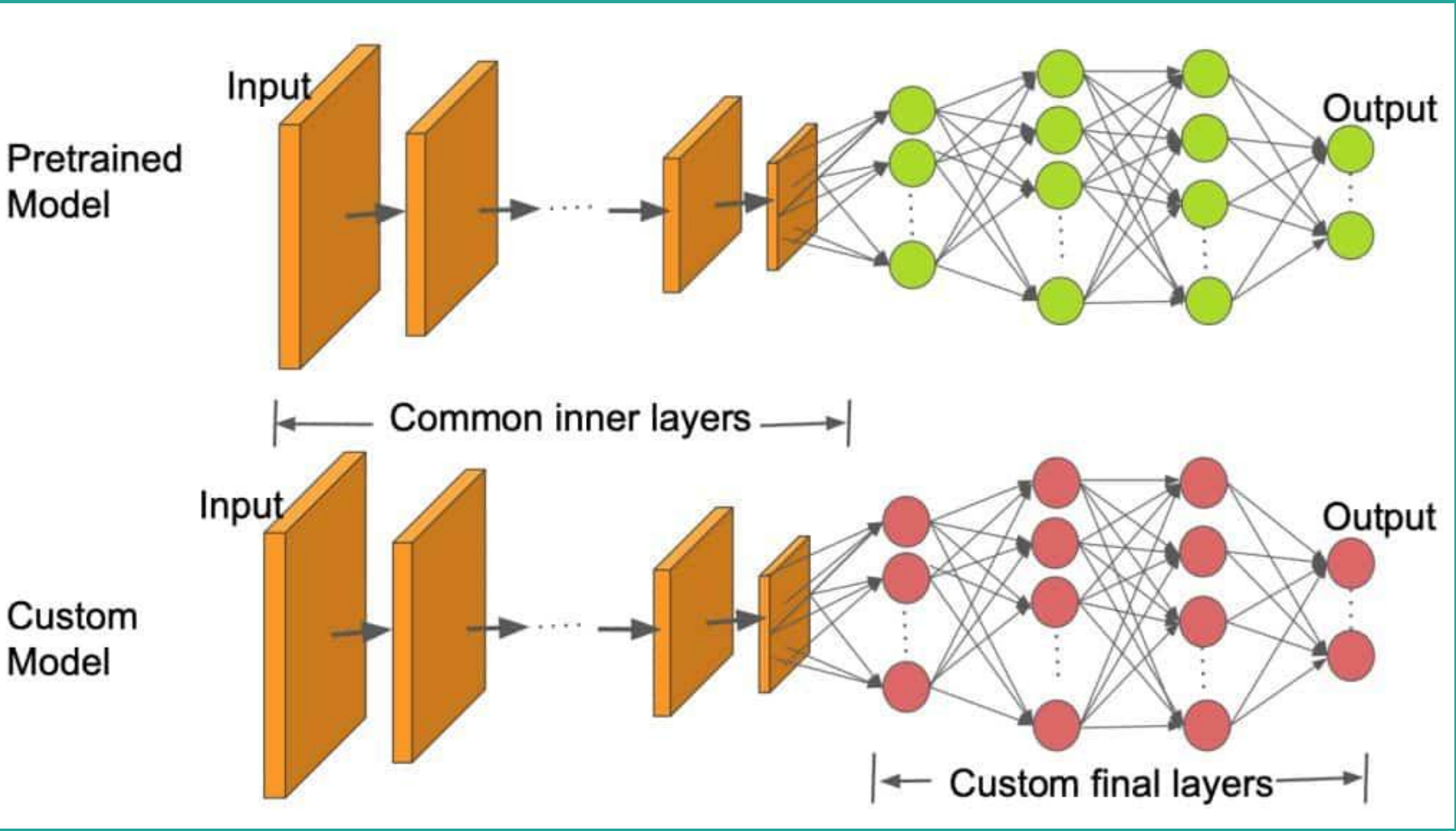
TensorFlow

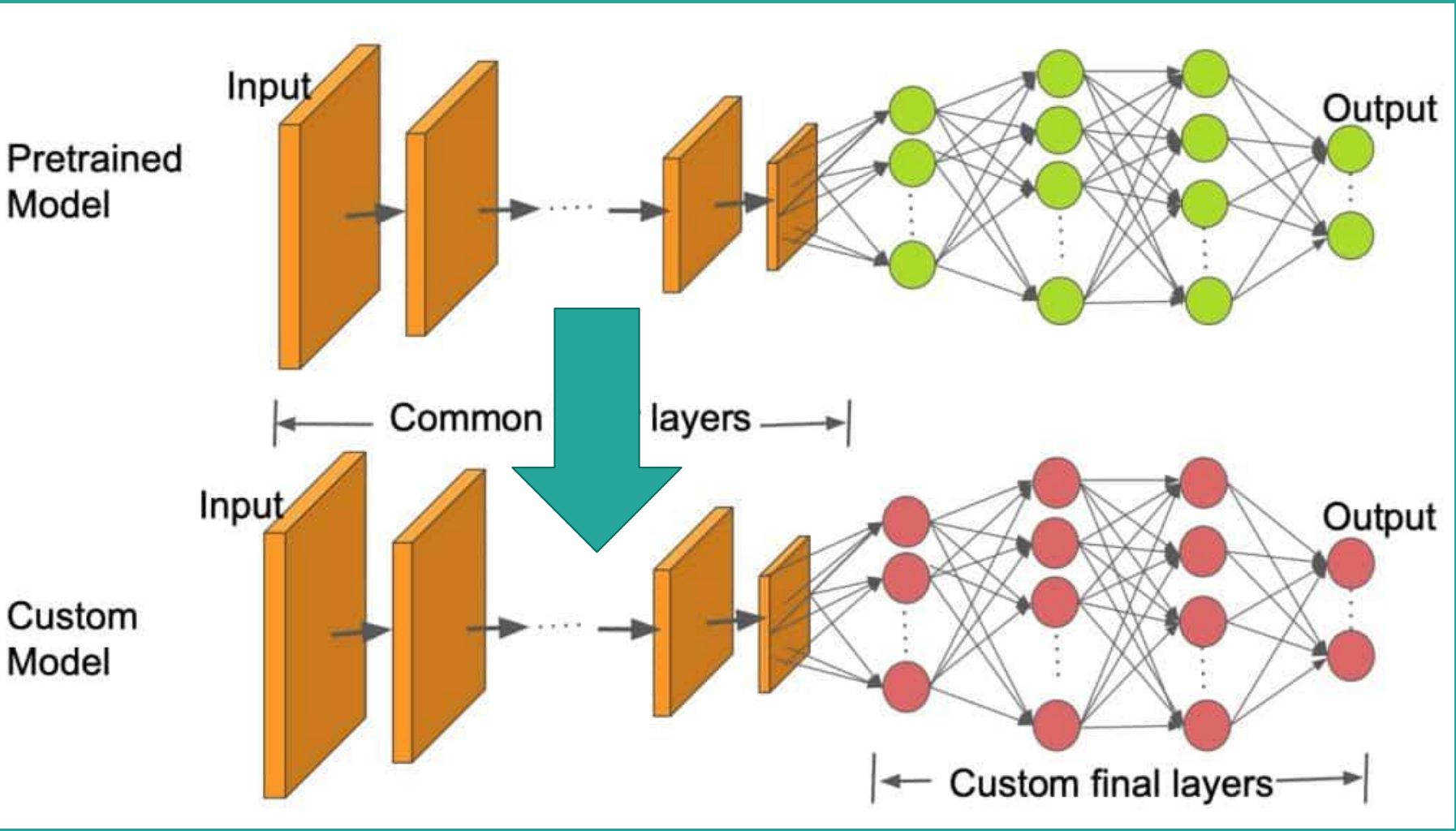
vs

PyTorch



Transfer Learning


Pretrained Model
Input
Output
Common inner layers
Custom Model
Input
Output
Custom final layers


Pretrained Model
Input
Output
Common layers
Custom Model
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Custom final layers

Let’s Continue Coding!