EVOLVE

MACHINE LEARNERS

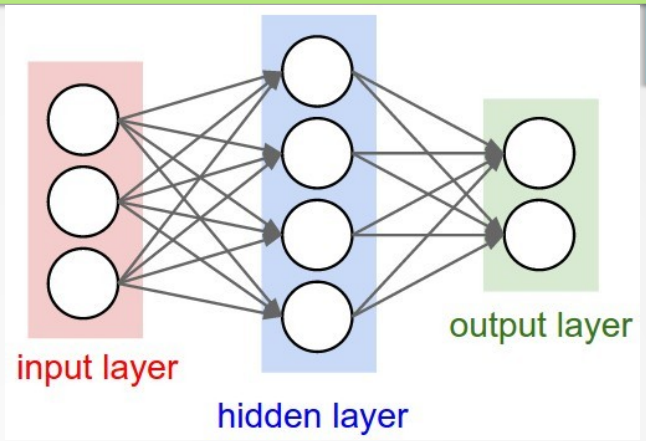
What is Deep Learning

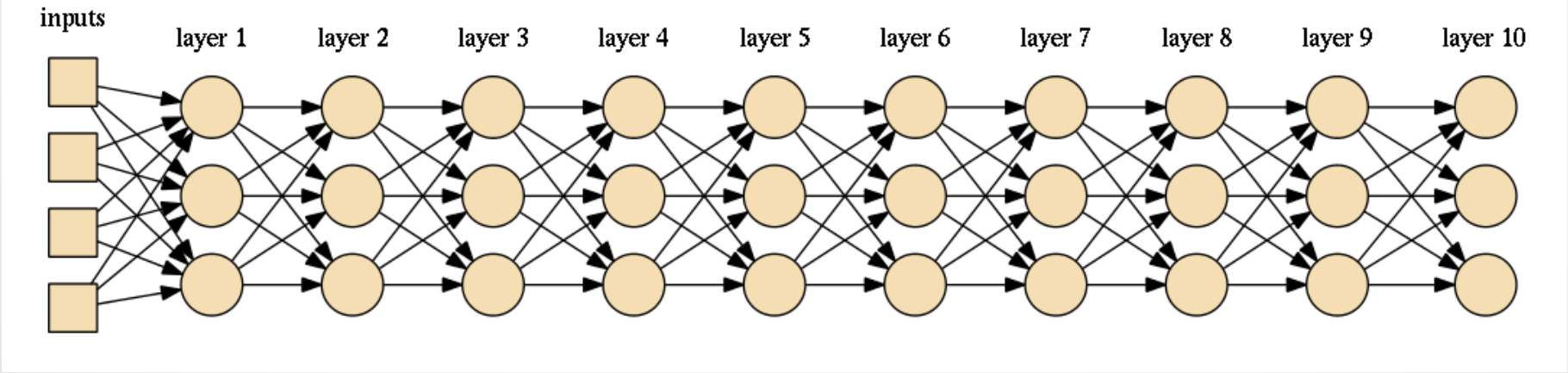
Presented to you by

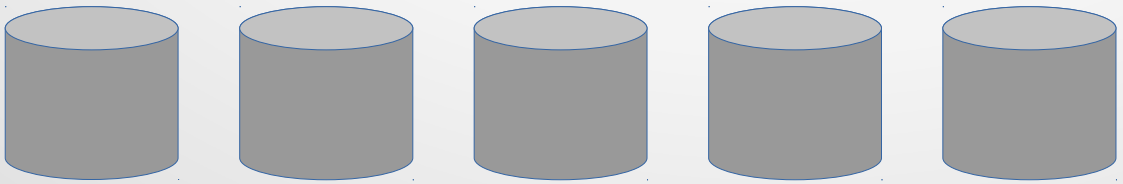
Dipl. Inform.(FH) Jony Sugianto, M. Comp. Sc.
Wira Dharma Kencana Putra, B. Sc.

Deep learning

What is that?

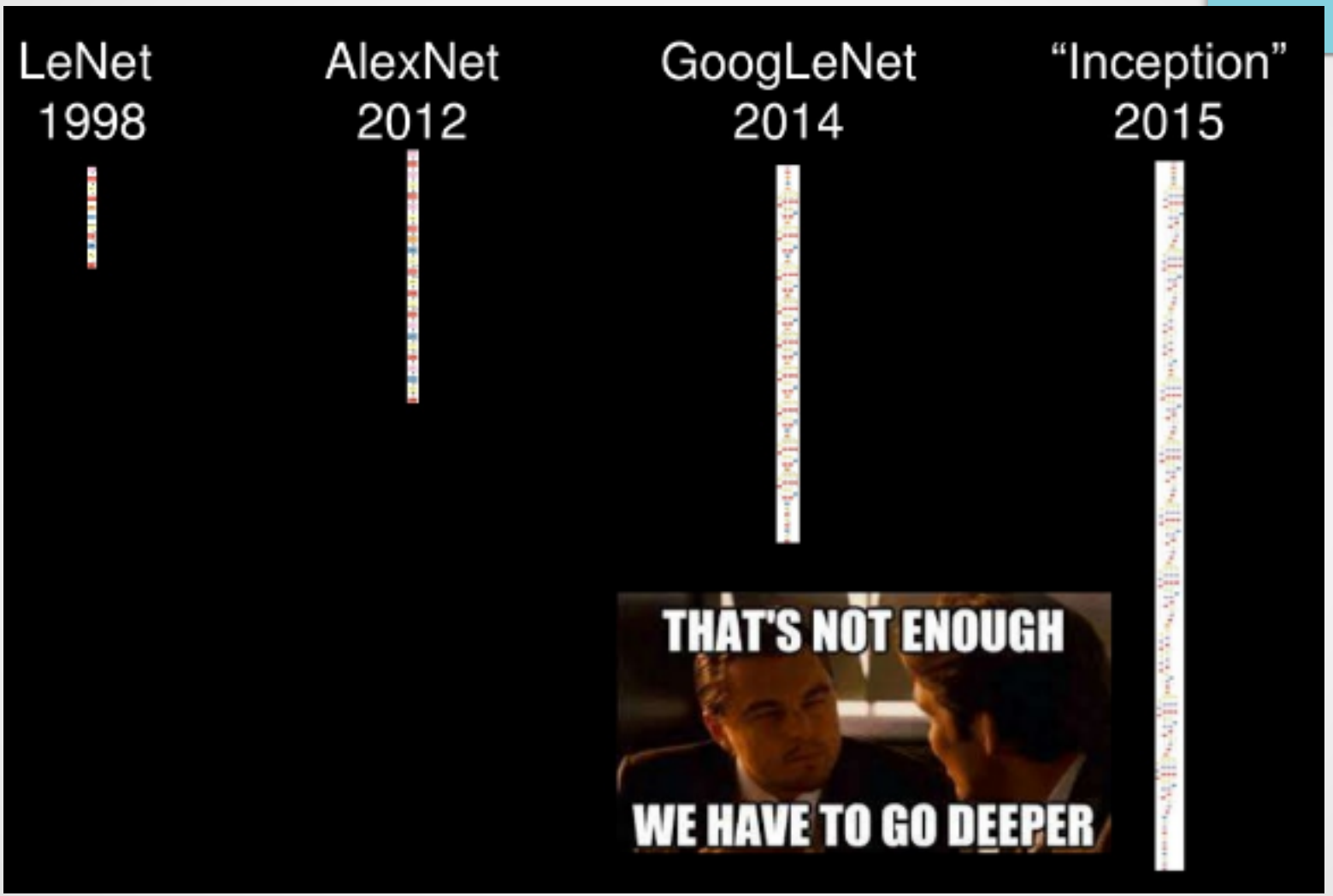






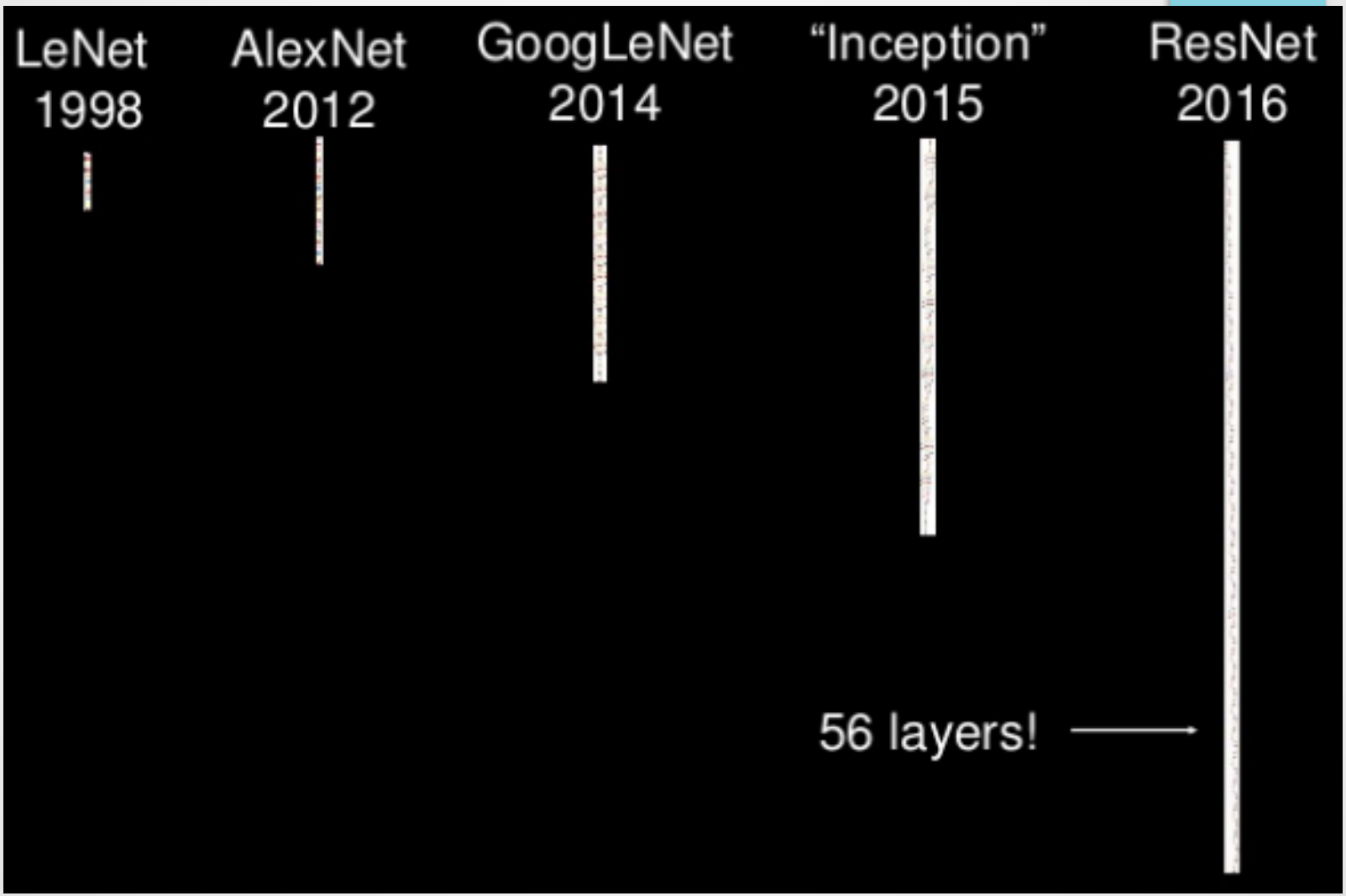
Deep Learning

Evolution of Deep Learning Architectures

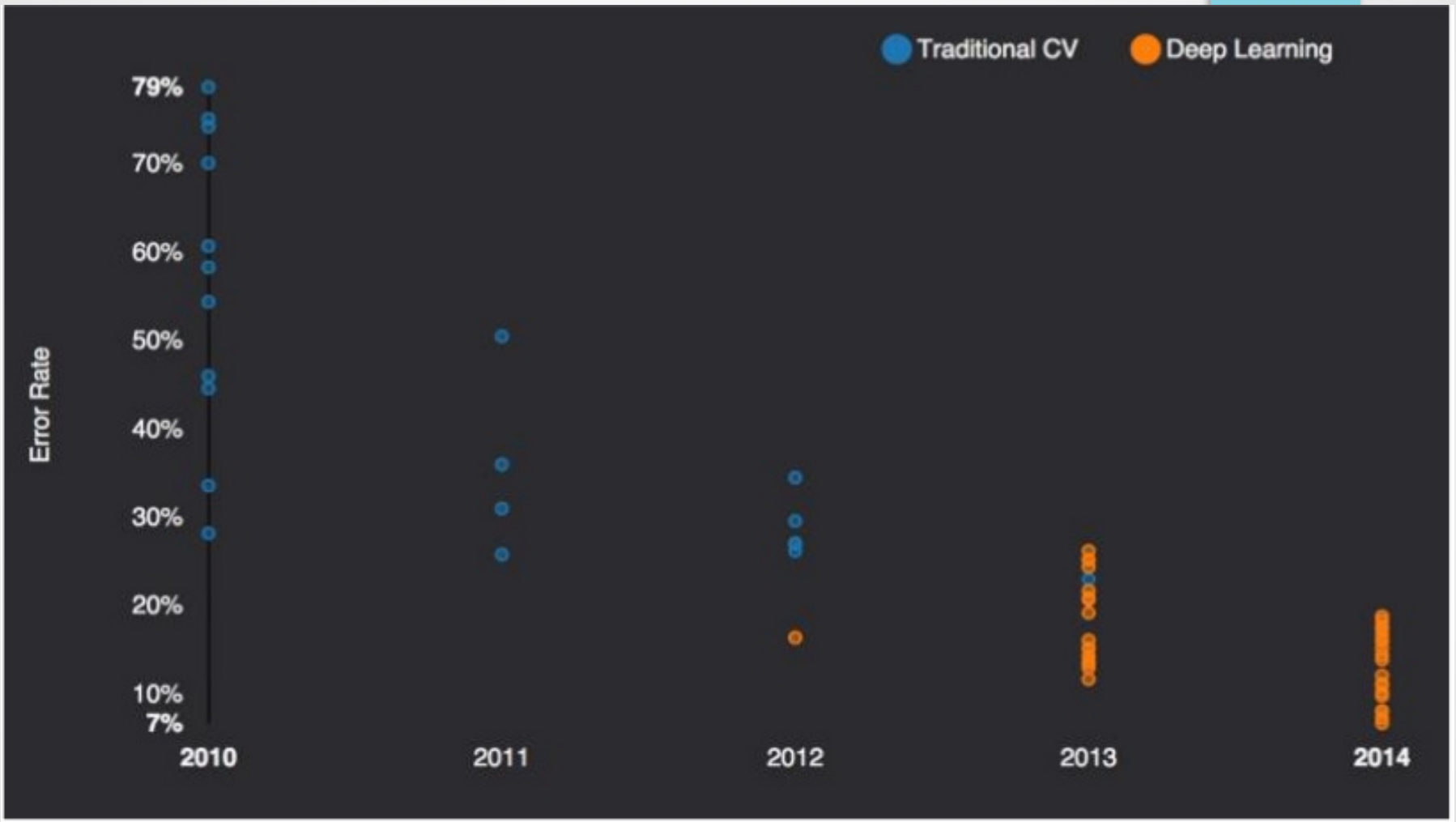


Deep Learning

Evolution of Deep Learning Architectures



Deep Learning



ImageNet: The "computer vision World Cup"

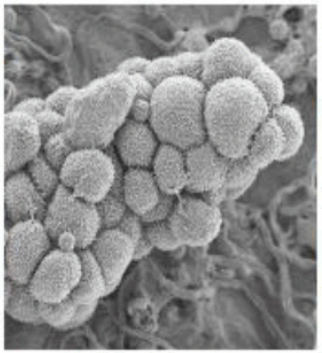
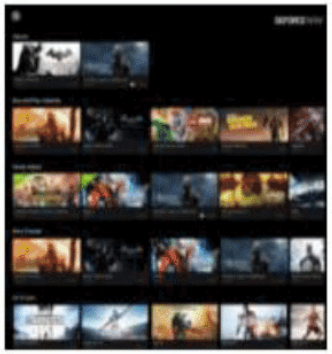
Deep Learning

Big Players Companies

Deep Learning

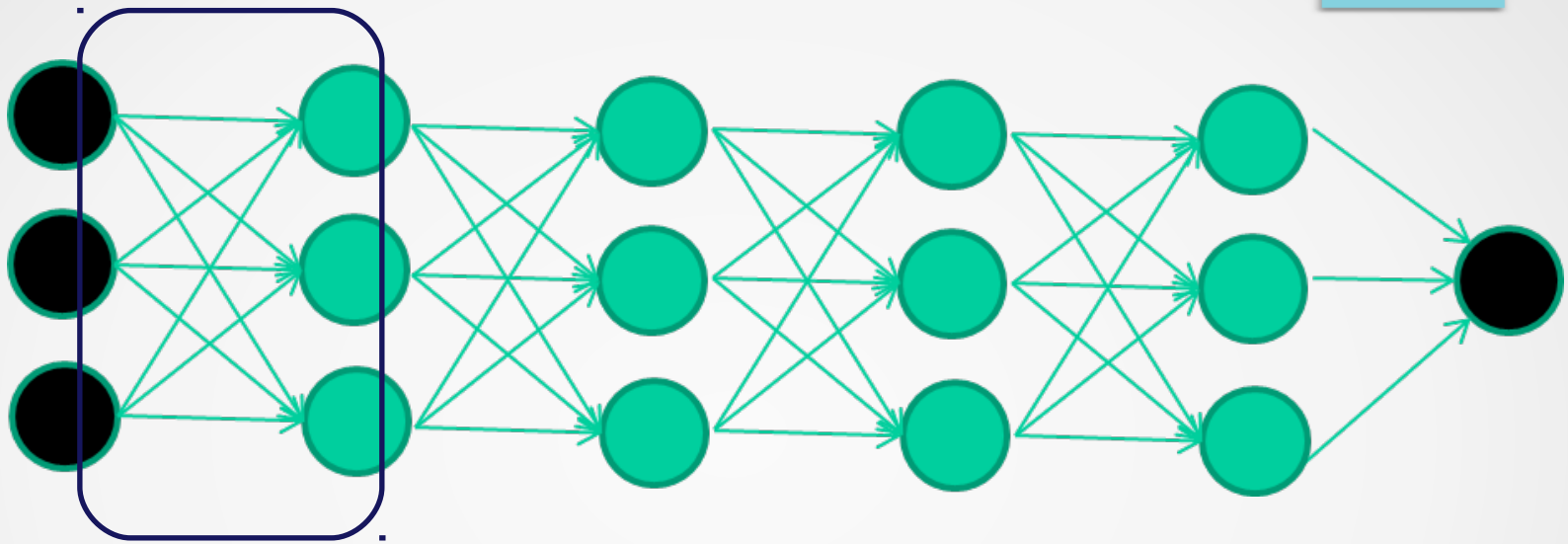
Big Players Startups

Deep Learning Everywhere

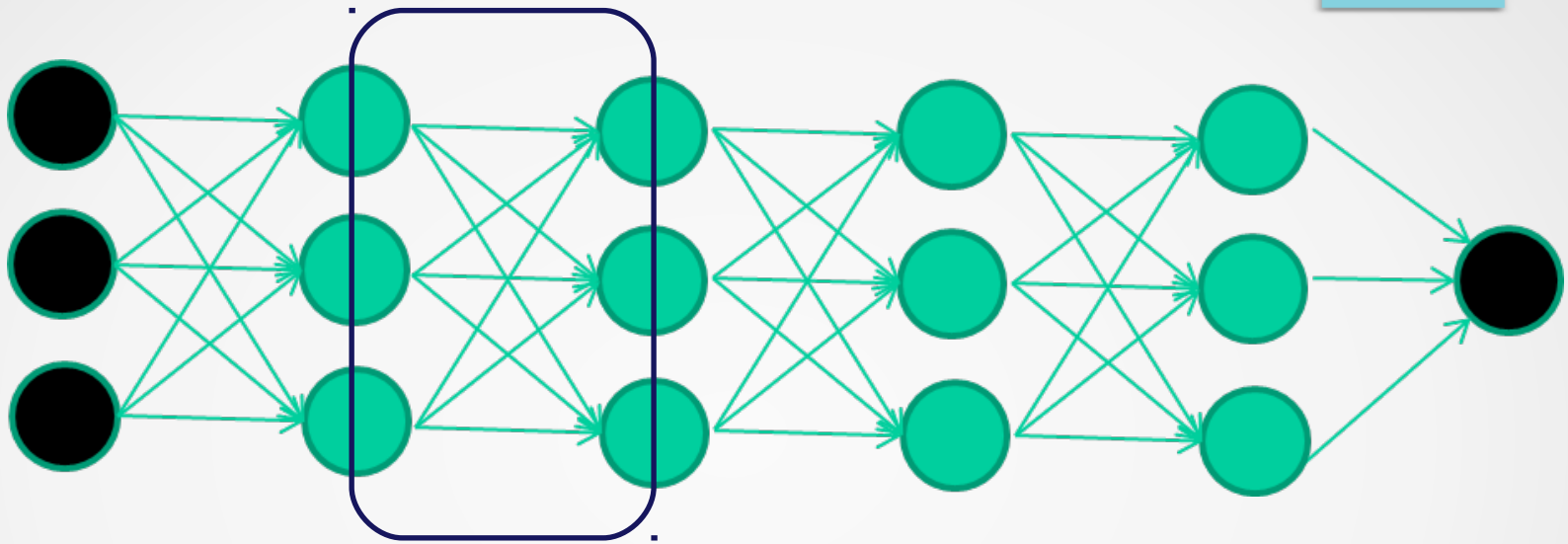
INTERNET & CLOUD	MEDICINE & BIOLOGY	MEDIA & ENTERTAINMENT	SECURITY & DEFENSE	AUTONOMOUS MACHINES
Image Classification Speech Recognition Language Translation Language Processing Sentiment Analysis Recommendation	Cancer Cell Detection Diabetic Grading Drug Discovery	Video Captioning Video Search Real Time Translation	Face Detection Video Surveillance Satellite Imagery	Pedestrian Detection Lane Tracking Recognize Traffic Sign

The new way to train Deep Neural Network



Train **this** layer first

The new way to train Deep Neural Network

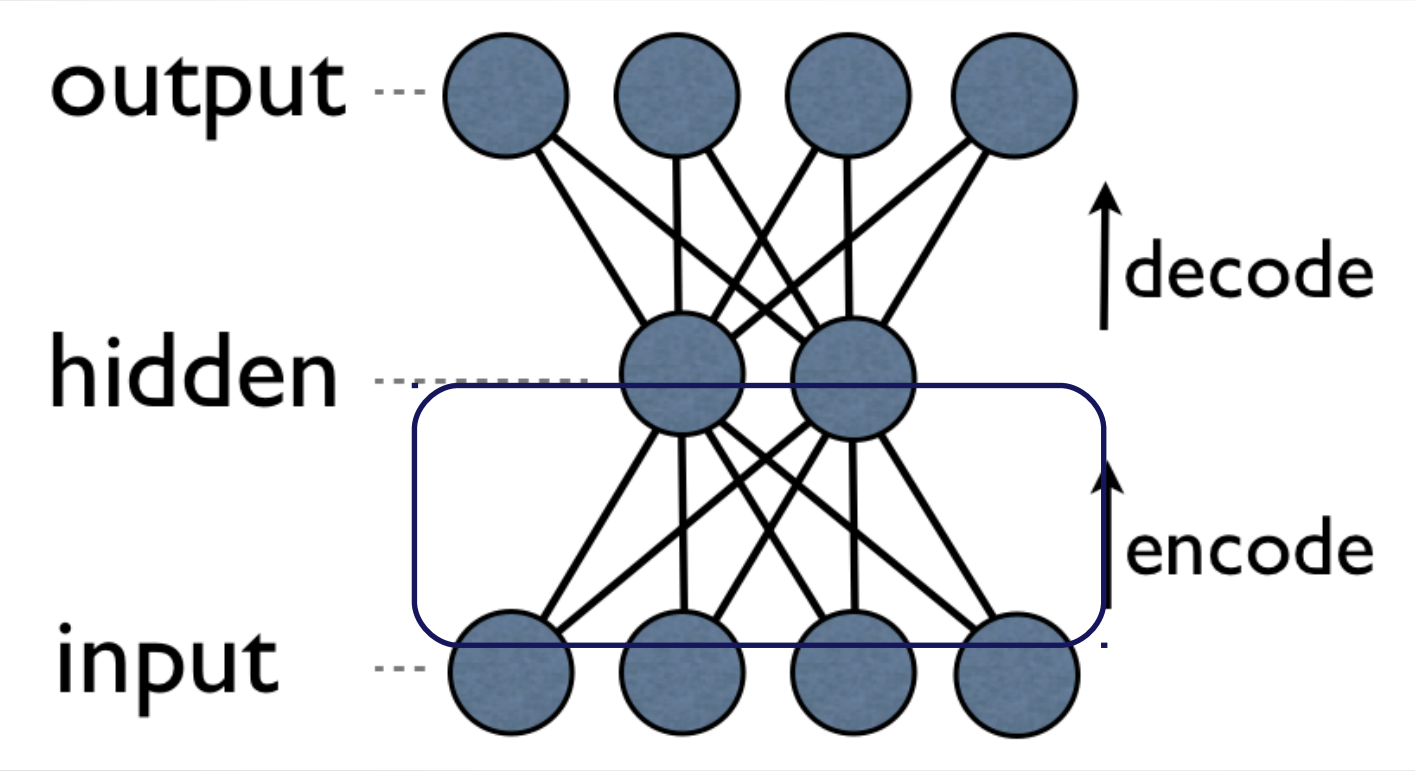


Train **this** layer first

then **this** layer

The new way to train Deep Neural Network

an auto-encoder is trained, with an absolutely standard weight-adjustment algorithm to reproduce the input



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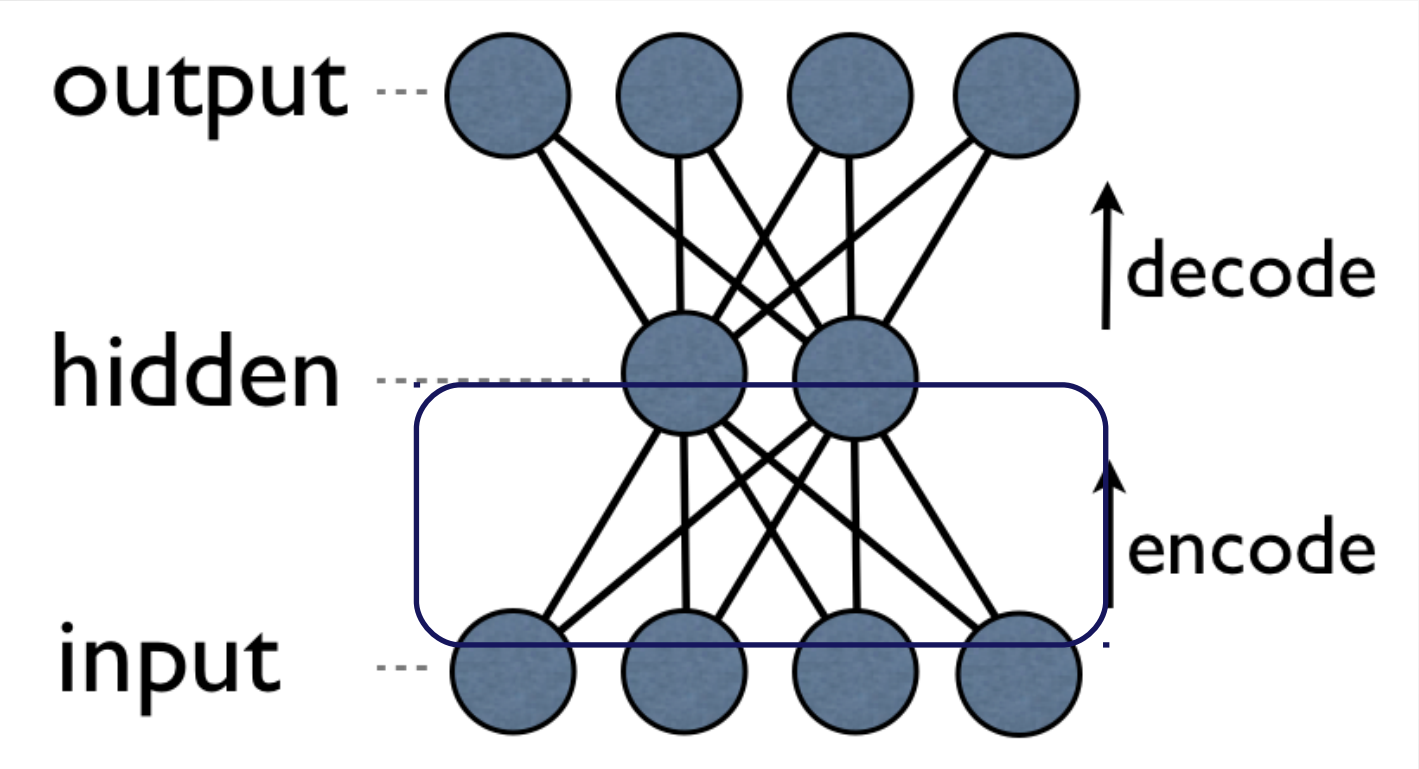
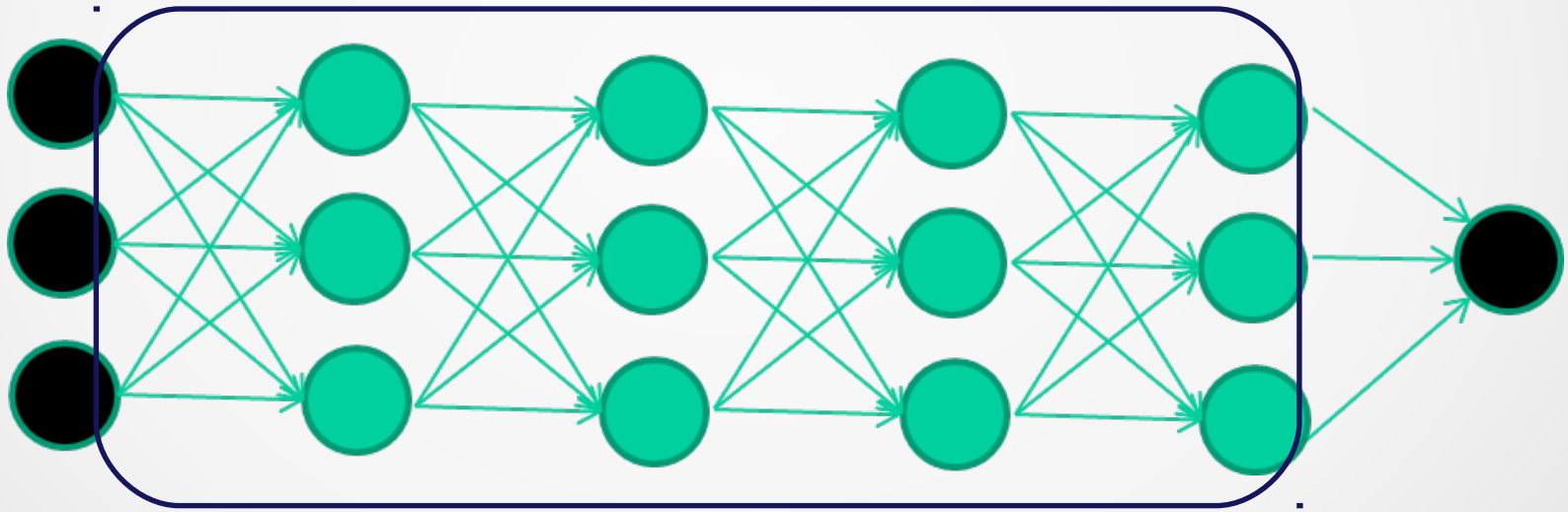


By making this happen with (many) fewer units than the inputs, this forces the 'hidden layer' units to become good feature detectors

The new way to train Deep Neural Network

intermediate layers are each trained to be auto encoders (or similar)



The new way to train Deep Neural Network

Final layer trained to predict class based on outputs from previous layers