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Deep Learning 101: A Primer on How Advanced Algorithms are Developed

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What is Deep Learning?

The Deep Learning Boom

Deep Learning Algorithm Development

Deep Learning Applications

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What is Deep Learning?

Deep Learning is a subfield of machine learning concerned with algorithms inspired by the structure and function of the brain called artificial neural networks

Image Processing

Speech Recognition

IoT

Genomics

Language Processing

Drug Discovery

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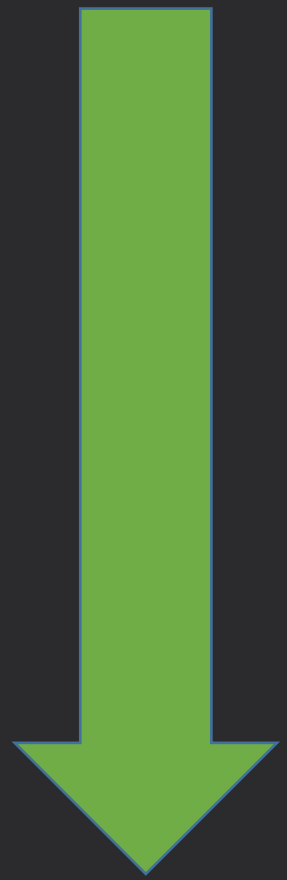
What is Deep Learning?

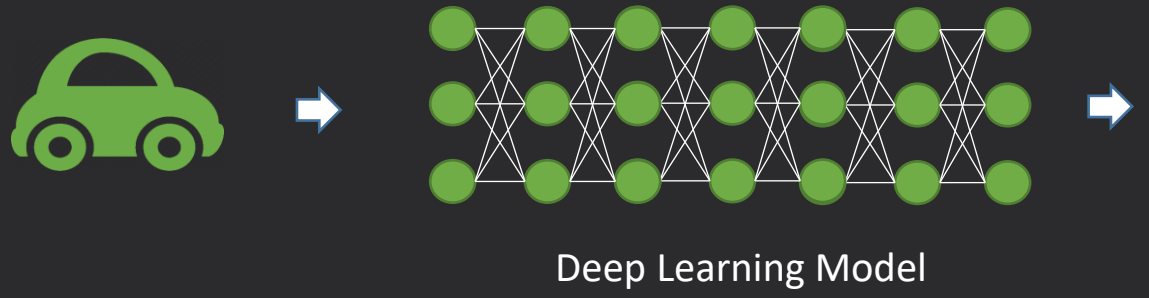


Increased Sophistication & Capabilities

Rules-based Algorithm Pipeline

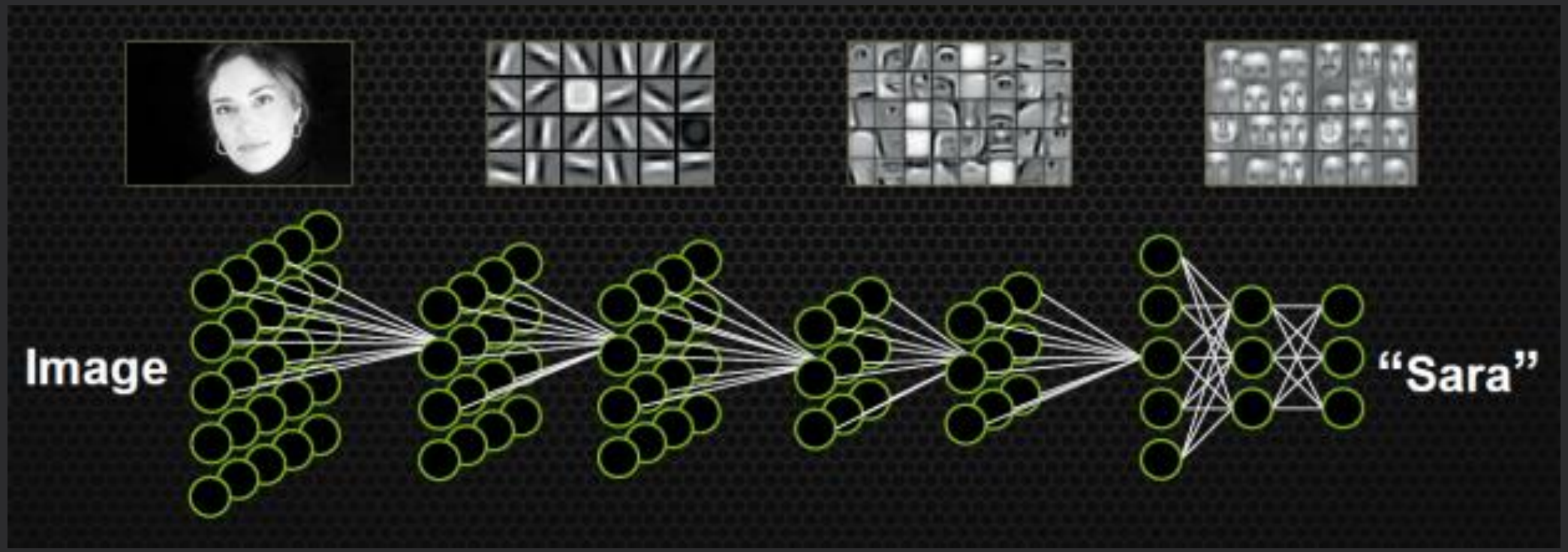
Machine Learning Algorithm Pipeline

Deep Learning Algorithm Pipeline



What is Deep Learning?

‘Deep’ refers to the model learning a hierarchy of features that logically build upon each other in increasing levels of abstraction.



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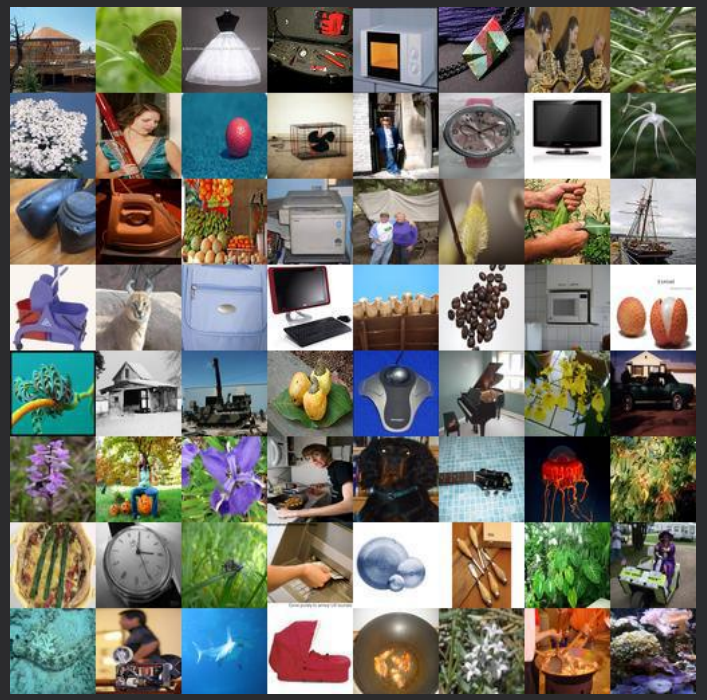
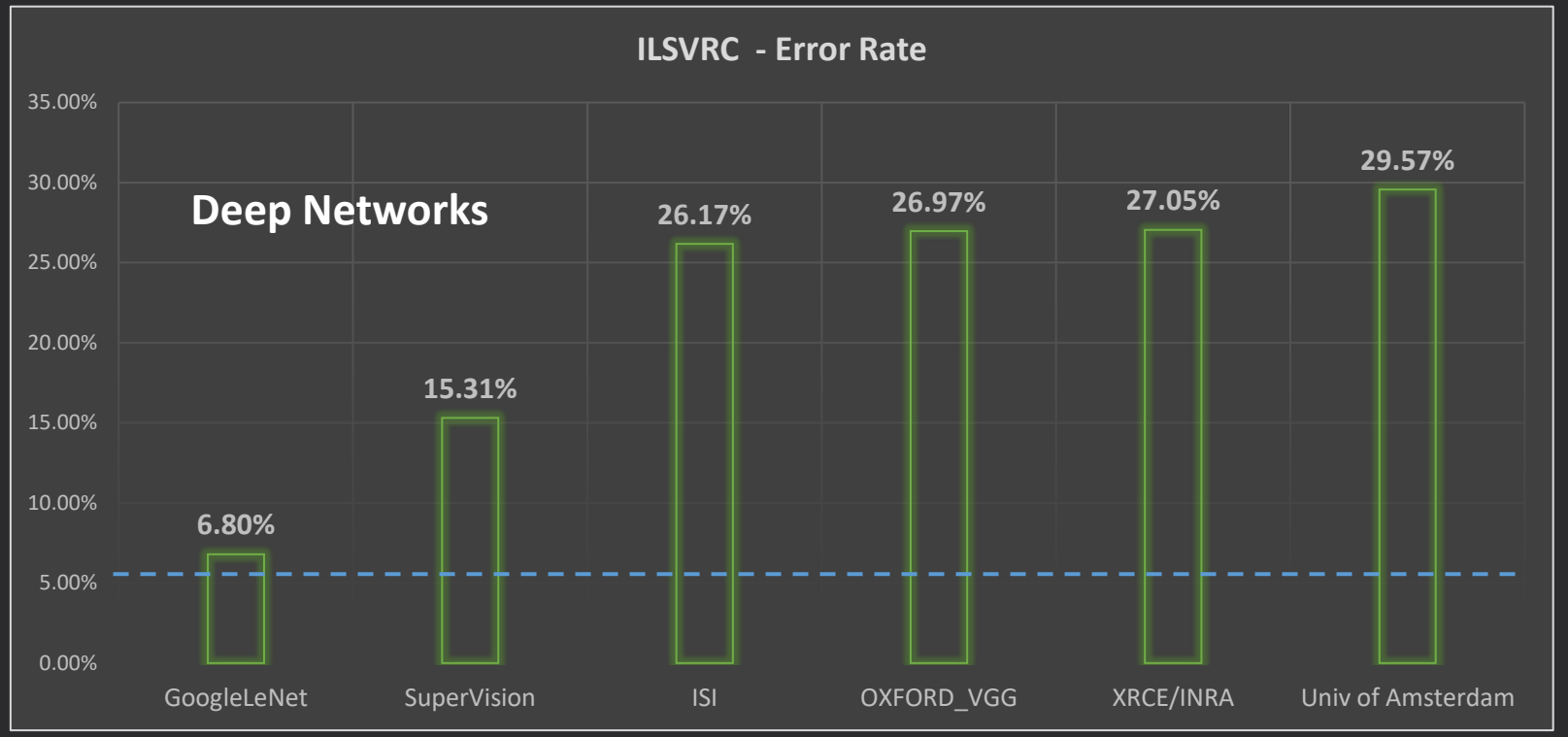
ILSVRC – ImageNet Large Scale Visual Recognition





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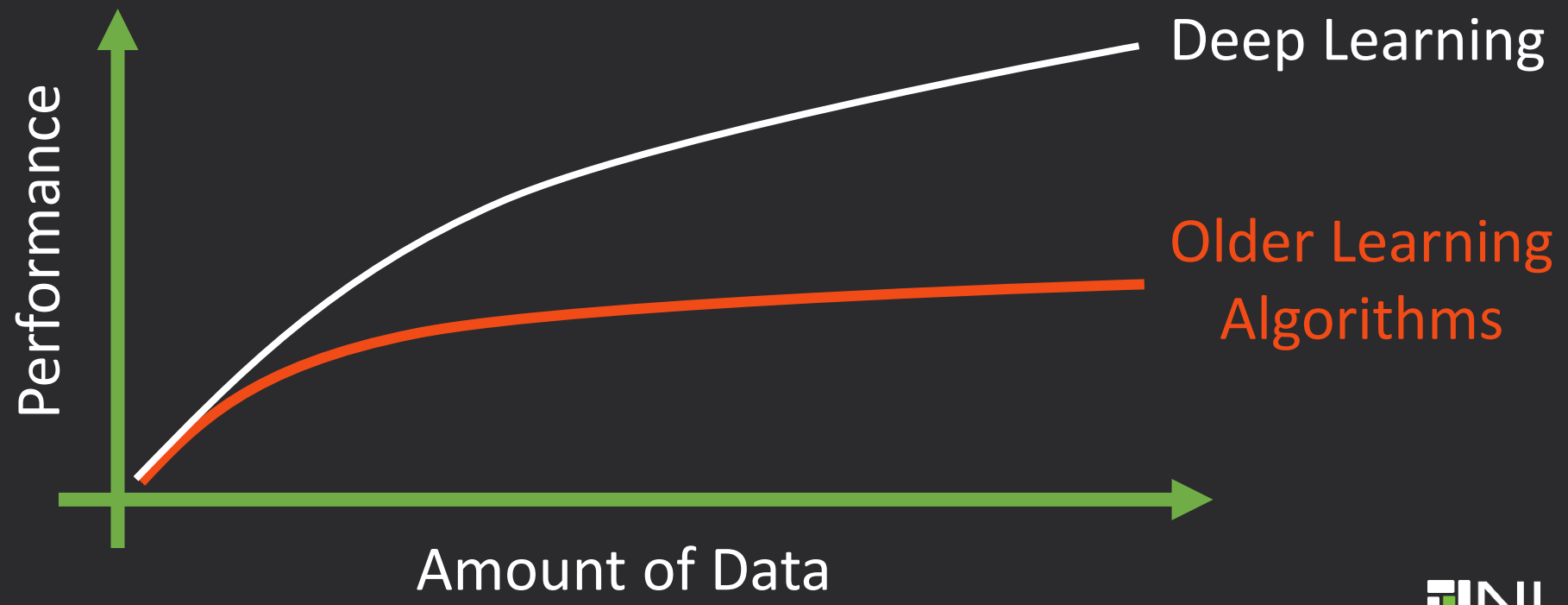
How do modeling techniques scale with the amount of data?



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Algorithm Development

Data Collection

Annotation & Analysis

Algorithm Training

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Algorithm Application

Raw Imagery

What the Algorithm `Sees`

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Questions?