

DATA, INFORMATION, KNOWLEDGE, AND SCALE IT'LL TAKE A VILLAGE...OF TECHNOLOGIES

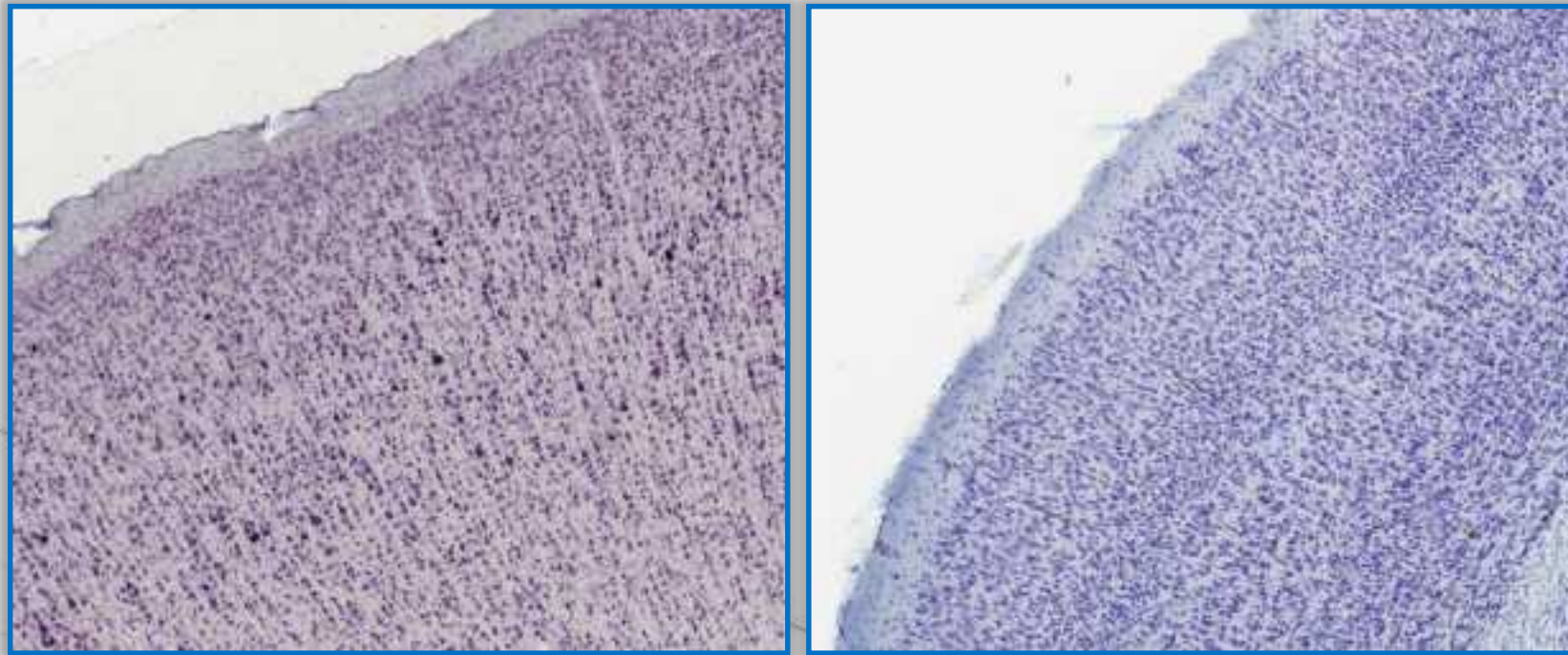
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FROM LAST YEAR

HOW IS HUMAN >> RAT?



SCALE AND DIFFERENTIATION!

Data noun, plural in form but singular or plural

in construction, often attributive

da · ta

Factual information (such as measurements or statistics) used as a basis for reasoning, discussion, or calculation



Information noun

in · for · ma · tion

The Communication or reception of knowledge or intelligence



Knowledge noun

knowl · edge

The sum of what is known: the body of truth, information, and principles acquired by humankind

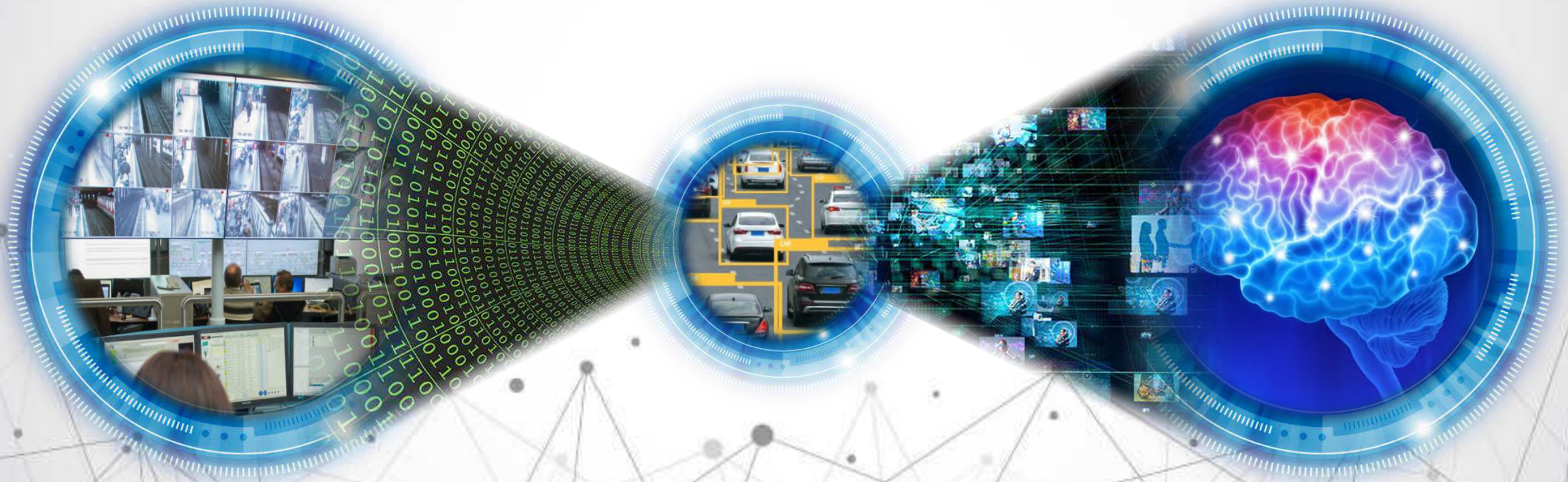


EVOLUTION OF AI

Data

Information

Knowledge

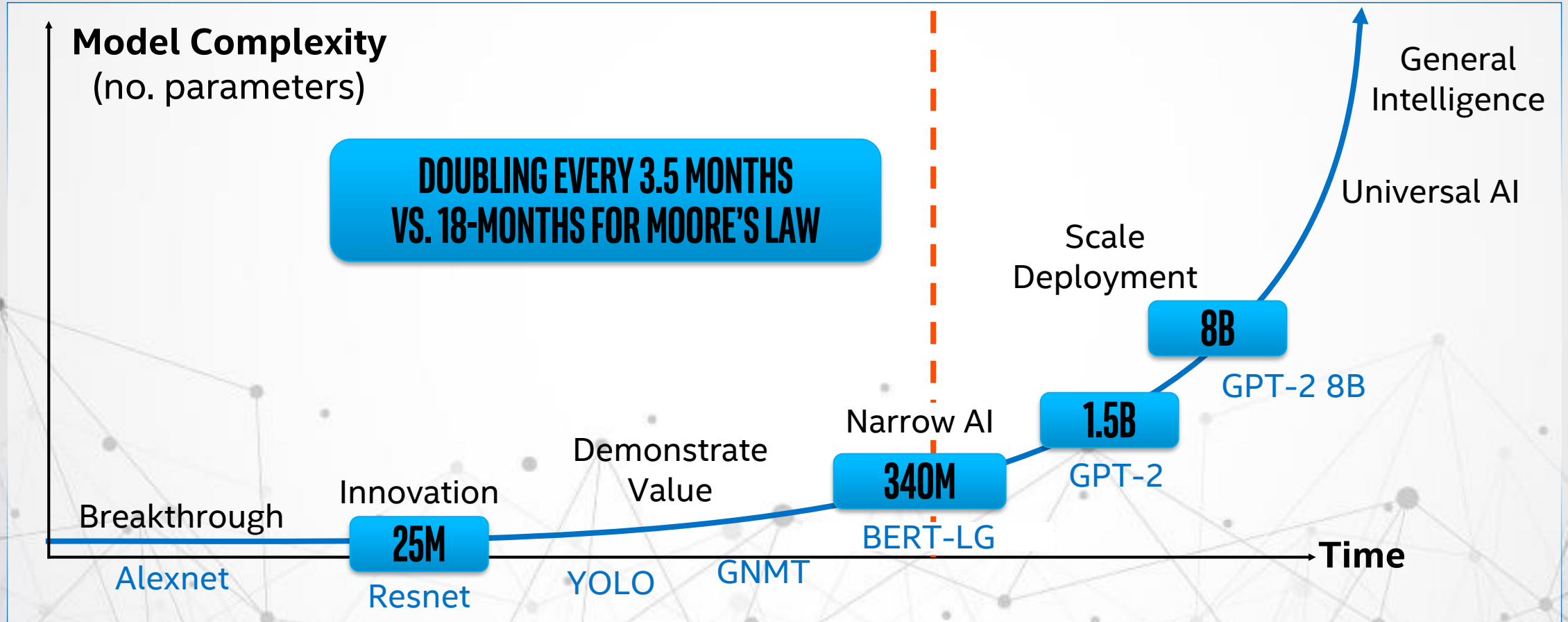


AI SYSTEMS TODAY

AI SYSTEMS TOMORROW



KNOWLEDGE EXTRACTION → MODEL COMPLEXITY → RAPIDLY INCREASING COMPUTE DEMANDS



NEED TO HIT 8-10X YOY → 64-100X OVER 2 YEARS

THE VILLAGE

SOFTWARE
2X

ARCHITECTURE
2X

INTERCONNECT
4X

PACKAGING
2X

SI PROCESS
2X

ARCHITECTURE

2X

SOFTWARE

2X

PACKAGING

2X

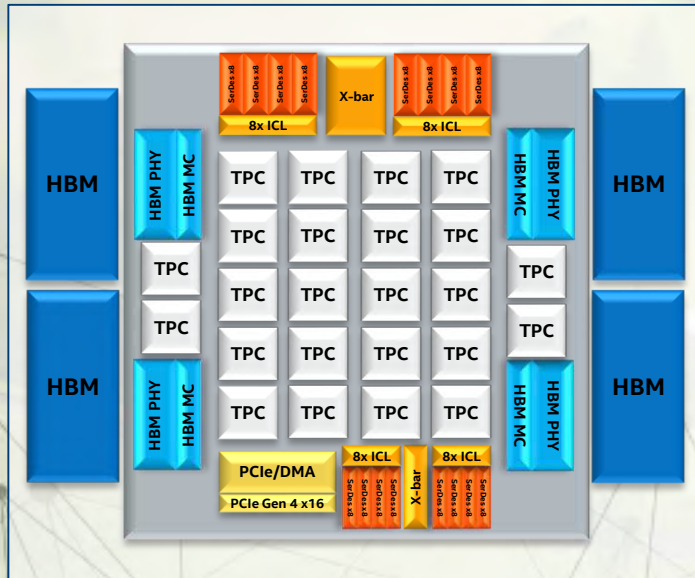
INTERCONNECT

4X

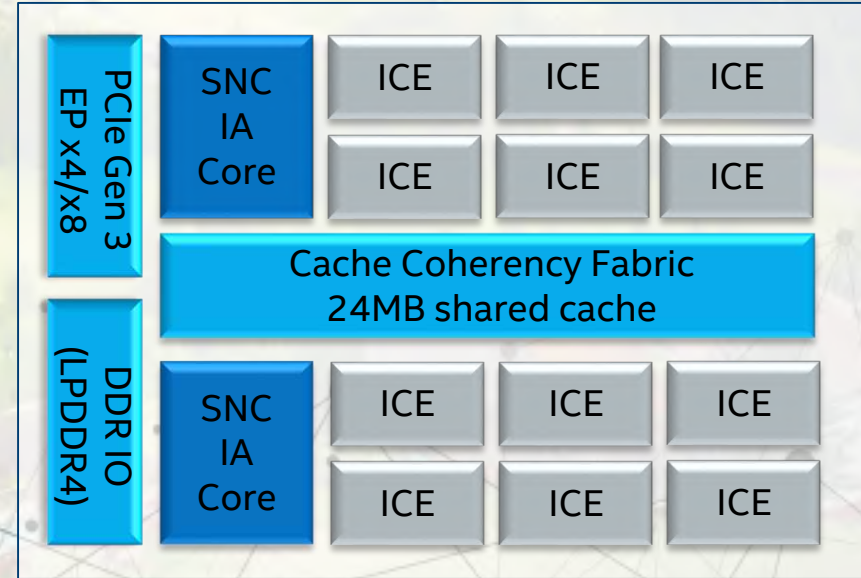
SI PROCESS

2X

Neural Network Processor - Training (Spring Crest)



Neural Network Processor - Inference (Spring Hill)





**ITS ALL ABOUT SCALE – MANY SERVERS WORKING
TOGETHER TO SOLVE A SINGLE PROBLEM**

Data → Information → Knowledge

Manipulating Knowledge Effectively Will Be THE Compute Problem

Computer Architecture is Becoming a Multi-system, Interconnect, and Orchestration Problem

Make it Efficient and Programmable to Support Scale Up

**As an Industry, Need the Right Abstraction for Distributing
NNs Across 1000s of Nodes**

A black and white portrait of a man with a mustache and glasses, wearing a suit and tie. The background of the entire slide is dark with a faint, light-colored neural network diagram consisting of nodes and connecting lines.

A CLOSING THOUGHT...

The number of chips training
a single neural network will
double every year



