WHAT TESLA MINDS IS WORKING ON

(Artificial) Intelligence

– How does it work?

– What are its constituents?

– Technical Realization
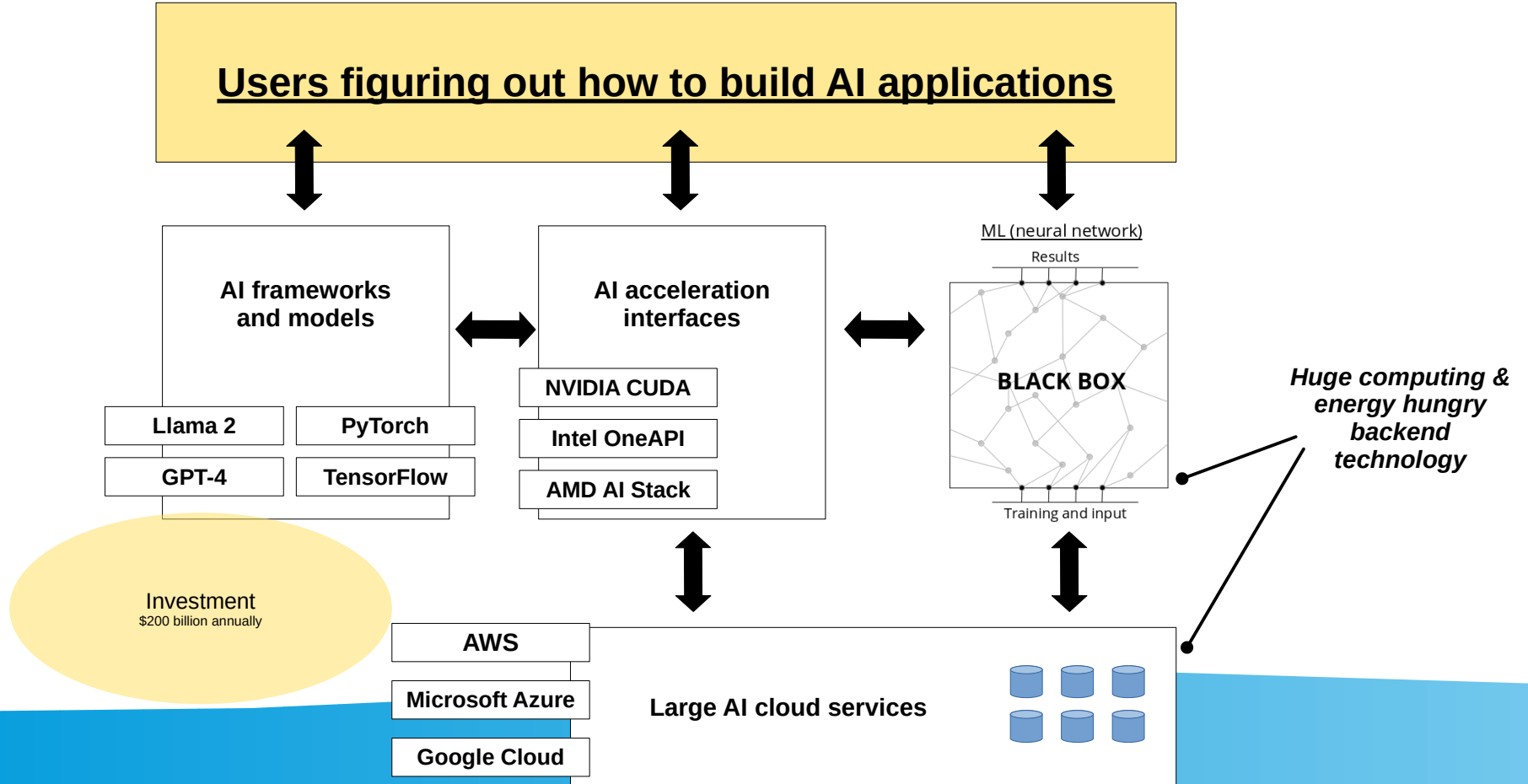
Contact

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What is currently happening in the market space

Users figuring out how to build AI applications

AI frameworks and models

| Llama 2 | PyTorch |
| GPT-4 | TensorFlow |

Investment
$200 billion annually

AI acceleration interfaces

NVIDIA CUDA

Intel OneAPI

AMD AI Stack

ML (neural network)

Results

BLACK BOX

Training and input

Huge computing & energy hungry backend technology

AWS

Microsoft Azure

Google Cloud

Large AI cloud services

Backend technology has huge potential for improvement

"People are certain that there is intelligence in ML. But they don't understand how."

#1 Full control and functional evaluation
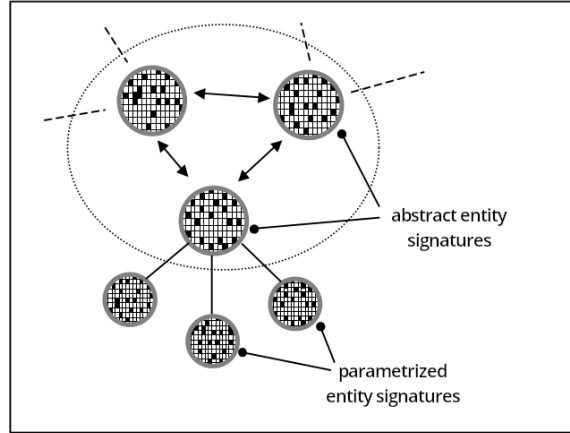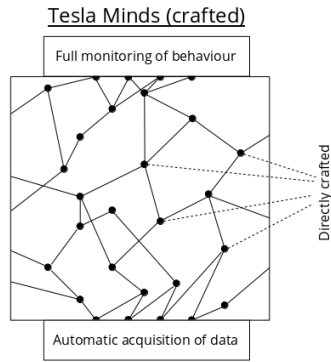
#2 Crafted for requirements

#3 Exponentially faster

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ML (neural network)

Results

BLACK BOX

Training and input

Huge computing & energy hungry backend technology
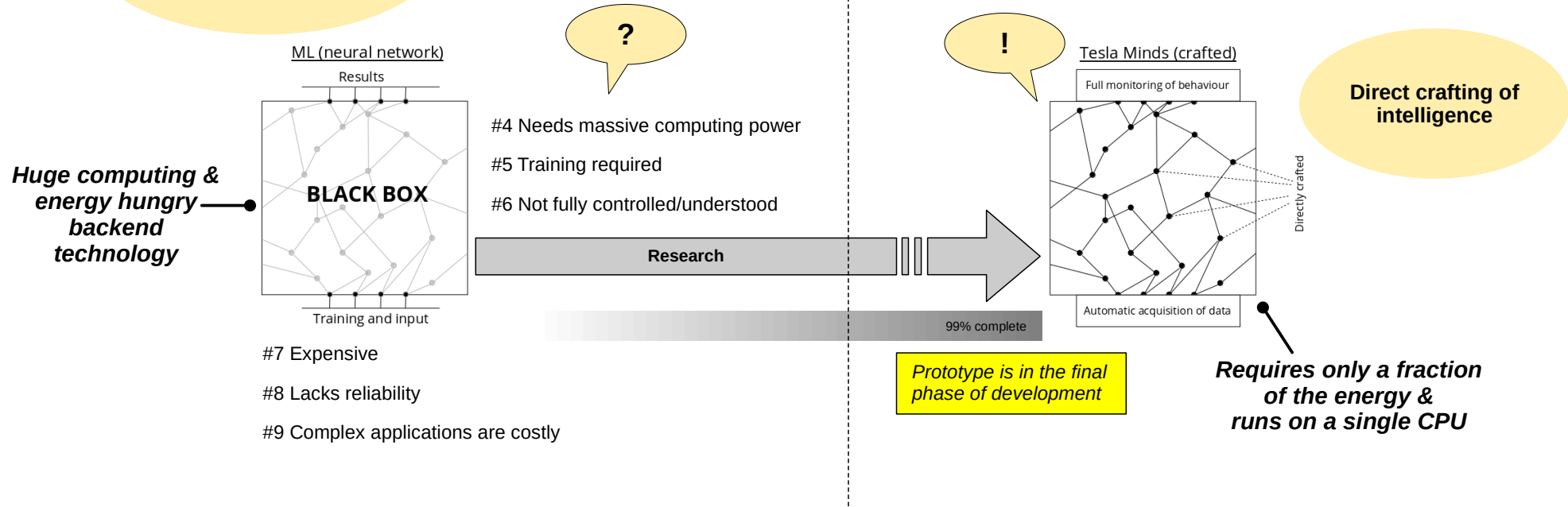
#4 Needs massive computing power

#5 Training required

#6 Not fully controlled/understood

Research

99% complete

Tesla Minds (crafted)

Full monitoring of behaviour

Directly crafted

Automatic acquisition of data

Direct crafting of intelligence

#7 Expensive

#8 Lacks reliability

#9 Complex applications are costly

Prototype is in the final phase of development

Requires only a fraction of the energy & runs on a single CPU

Constituents of AI

Tesla Minds (crafted)

Full monitoring of behaviour

Directly crafted

Automatic acquisition of data

abstract entity signatures

parametrized entity signatures

AI is directly crafted from logical elements.

The result is an AI that can be modelled and implemented with all the tools we have developed in 50 years of computer science:

Programming languages, APIs, tools, visual modelling, UE blueprints and so on.

Building blocks with a direct digital presentation replace neurons/ML.

These building blocks together perform equivalent functions as the synapses in ML, but instead of 10K neurons that need training, only a handful of building blocks can form smart logical gateways exactly as needed.

We end up with a system in which we understand intelligence based on logical, mathematical and algorithmic descriptions.

The resulting system is not only vastly more efficient, it opens the door for entirely new classes of applications.

A specifically created integrated development environment (IDE) to craft this type of AI is the tool with which we can shape our future.

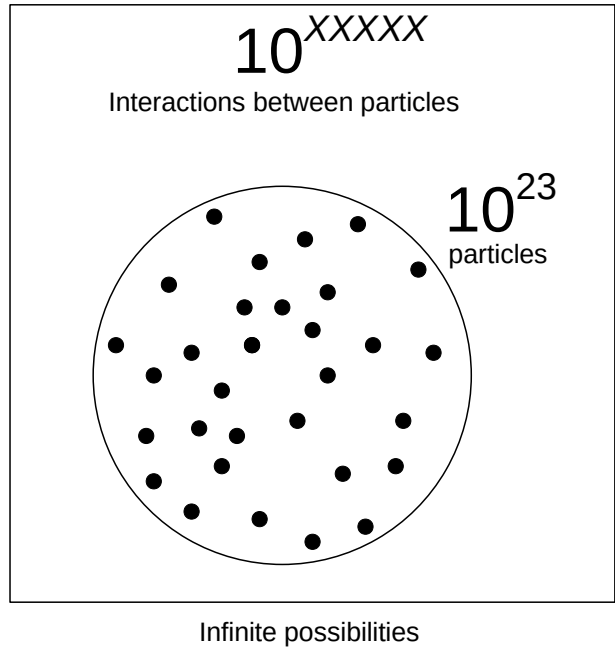

Logic to process behaviour
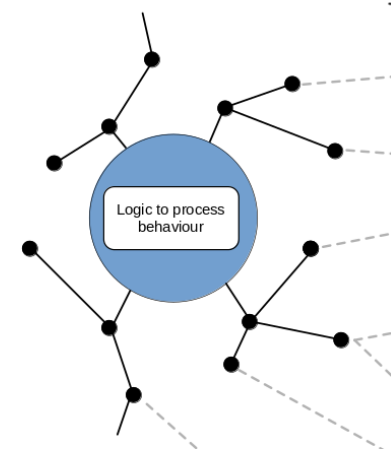
Why "*algorithmic AI*"?

#1 Reflects our approach to AI.

#2 Is accurate and can be crafted.

#3 Algorithms can be understood.
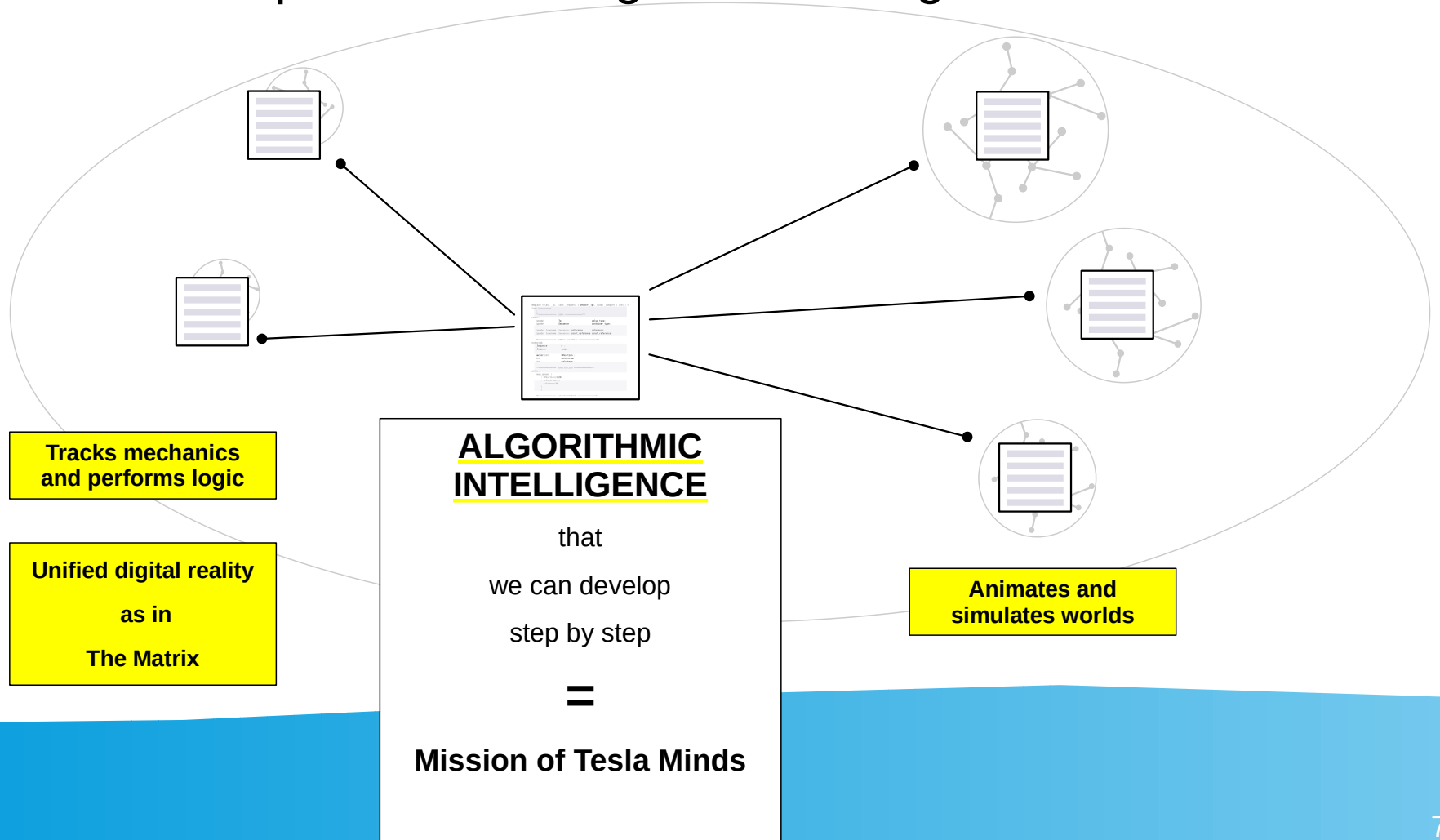
Possibilities and Intelligence and Reality

10^{XXXXX}

Interactions between particles

10^{23}

particles

Infinite possibilities
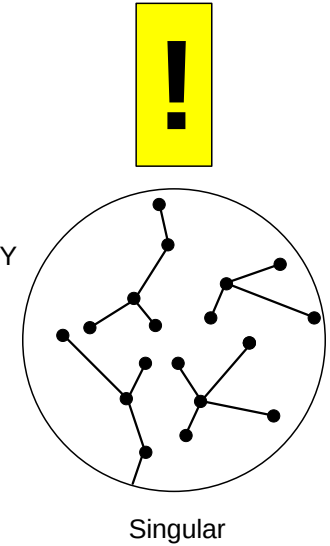
**INNATE SYSTEMIC
INTELLIGENCE**

ONLY **1** REALITY

1

Singular

!

#1 We can learn to access it and it is intrinsicly available in most systems.

#2 Today typically this isn't done; for example plain variant processing ignores most of the intrinsic intelligence and then programmers add heuristics to interpret data and select variants. Which is technically hugely inefficient.

#3 Tesla Minds develops algorithms to describe and harness this intrinsic intelligence. We call it **algorithmic intelligence**.

Development of Intelligence and Algorithms

Tracks mechanics and performs logic

Unified digital reality

as in

The Matrix

ALGORITHMIC INTELLIGENCE

that

we can develop

step by step

=

Mission of Tesla Minds

Animates and simulates worlds

Why video games are ideal to prototype AI

Video graphics technology

1990

Pixel processing

Color spaces

32 bpp true color

Polygonometric representation

3D wire frame models

Texture mapping

Lighting

Shader models

Quaternions

Separating axis theorem

Minkowksi space

Mesh shaders

Lumen dynamic detail

2023

Similar to how video graphics technology evolved, AI has to mature and a number of technologies have to be developed step by step over time.

Tesla Minds' work breaks new ground to merge digital logic and AI behaviour. The result are tools that are ideal to create game worlds with so far unmatched systemic gameplay.

It offers ambitious development studios access to a cutting-edge technology that vastly increases productivity and can lead to products with unmatched appeal.

The development of tools, IDE and content can go hand in hand.

AI technology

1999

Pathfinding

Adaptive lookahead

State machines to process behaviour

Behaviour trees

Abstract state machines

State trees

Event sequencing

Behaviour building blocks

Rules-based algorithmic AI

???

Current Objectives

#1 Completion of the first prototype dubbed H5

#2 Presentation and demonstration of the AI's capabilities to the public

#3 Search for an ambitious studio to develop a groundbreaking game with the AI

#4 Partnering with a business angel to scale up product development

Meet us at the NG23 in Helsinki!