

THE BRAIN IS THE ONLY VIABLE TEMPLATE FOR INTELLIGENCE

The brain is a gigantic (bio)logical circuit, the connectome is the map of all neural synapses.

To duplicate the human mind, one must create the brain tissue 1st, so it can be activated.

Neuroscience is required to create complex logical structures & leave mathematics behind.

Since the brain is NOT a computer, this requires a revolutionary new digital technology.



Company

Site <https://www.tipalo.com>

Documents <https://www.tipalo.com/Media/Download/>

Youtube <https://www.youtube.com/watch?v=WJ8GcBK2YgE>

Linkedin <https://www.linkedin.com/company/tipalo/>

CEO portrait

Media <https://asianroboticsreview.com/home555-html>

LinkedIn <https://lnkd.in/e7-tCAjk>



*"Intelligence creates knowledge,
imagination heralds the future.»*

OUR COMPETITIVE ADVANTAGE

Embedded Self-Learning Mechanism to learn on the fly

Accumulates knowledge via episodic memory

Uses an universal format for storing information

*Has pre-defined knowledge according to its species,
defined by body hardware & level of intelligence*

Acting in real-time in the real world via own body

*Tipalo GmbH is a Swiss LLC near Zurich, a fabless AI startup
with own software to pioneer logic applications.*

*We develop COGNITIVE AI as digital brains with
an Artificial Nervous System similar to biological brains.*

*Our AI technology is used for the autonomous control of bodies,
physical as buildings, vehicles, robots or virtual as avatars.*

*The bodies must be equipped with digital devices,
that act as sensors, actuators and their own organs.*

COGNITION - 10 GENERAL FEATURES USED IN TIPALO AI TECHNOLOGY

BRAIN

1. **Cognition is a function of the brain, hence it requires a body with sensors, actuators and organs.** Perception requires sensors, e.g. camera for images, action needs actuators, e.g. limbs for locomotion, while organs define the own needs, e.g. hunger for energy in order to stay «alive».
2. **The building block of the brain is the neural net, which can have different functionality as specialty,** which on its side consists of neurons connected via synapses, also called spiking cells with ties.
3. **The neural networks must all execute simultaneously in real-time, all the time and stand-alone.**

NEURAL NETWORKS

4. **The neural networks can have either a predefined or a user-defined connectome,** having the ability to form new connections between the cells and also between neural nets.
5. **There are predefined neural nets to interface with the body components,** to transform external signals into information and viceversa, for each type of sensor, actor and organ.

KNOWLEDGE

6. **The entire knowledge, predefined or accumulated, consists of different specialized areas of knowledge,**
7. **A knowledge area would consist of specific types of neural nets:**
a neural processor of information with an own self-learning mechanism, a log used as a working memory and a long-term memory to store and link the information as a self-associative memory.

ARTIFICIAL NERVOUS SYSTEM

8. **The different areas of knowledge together with the drivers will form the Artificial Nervous System.**
9. **The ANS begins like any newborn, with a minimum of predefined knowledge known as genetic inheritance.**
10. **The number of neurons remains the same from the begin to end of life, only the knowledge is extended.**

Brain architecture - Levels of emergence

No	Name	Description
INTEGRATION		
10	Social interaction	with humans and other living beings in different environments
		with other AI entities, of own species and different
9	Intelligence level + average neural capacity	Abstract - Primates, 10G
		Logical - Vertebrates, 1G
		Physical - Insects, 1M
MIND		
8	Knowledge	accumulated via own experience in landscapes: terrestrial, naval, aero, space
		pre-defined according to species, determined by body structure, neural capacity, ontology + intelligence level
7	Abilities	Autonomous thinking + decision-making, Interaction, Locomotion, Communication
ORGANIZATION		
6	Nervous system regions	Internal organs, Sensors, Glue Logic, Action
5	Adaption	Self-learning mechanism + Memory as short-, mid- and long-term
INFORMATION		
4	Ontology	Classification of own thoughts as concepts, structures, hierarchies
3	Neuro-logical	Connectome as spiking neural nets
COMPUTER		
2	Software	Concurrent Applications (written in C++) + database (Sqlite)
		Operating system , Emteria as modified Android for embedded systems
1	Hardware	Smartphones , with multicore processors, memory + sensors
		Body , framework with devices acting as proprioception sensors, actuators and internal organs

TIPALO IN A NUTSHELL

Deploy

Products & services

Edge AI - products

Cloud AI - services

telepresence + evaluation

Colony AI - combined Edge AI + Cloud AI

Usage

different levels of intelligence,

as single AI or group of AIs

L1 - drones + managers for smart buildings

L2 - pilots for autonomous vehicles

L3 - robotic workes for outer space tasks

Intelligence

levels as biological equivalent

capacity as max. amount of neurons

L1 - insects, 1M cells

L2 - mammals/fishes/birds, 1G cells

L3 - primates, 10G Cells

Evaluation

Reports, by hour/day/week/month for
information by knowledge areas updated

via own experience

shared, with / from others

for all activities, sorted by tasks

Tipalo AI technology

DIGITAL BRAIN WITH
ARTIFICIAL NERVOUS SYSTEM
for buildings, vehicles and robots
with sensors, actors and organs

Features

Real-time autonomous AI

Self-Learning Mechanism

Genetic Memory with knowledge areas

Accumulated knowledge via

own / shared experience

Background

Space-time-matter continuum

Space as neighboring cells

Time flow for matter to act + react

Matter = basic components (re)combining

Objects as connected components

Development

Framework for cognitive edge AI

Components IP as neural nets

PNN - Programmable Neural Nets

SLM - Self-Learning Mechanism

SAM - Self-Associative Memory

Libraries

ANS - Artificial Nervous System, with

neural drivers for sensors/actors/organs

neural apps, e.g. ID, locomotion, tasks

neural storage, e.g. STM / MTM / LTM

Short-/ Mid-/ Long-Term Memory