

GENERAL-PURPOSE DECENTRALIZED AUTONOMOUS ORGANISATION



Multi-Agent AI DAO

(3D Printing x Big Data x VR/AR/MR x IoT x Autonomous Robots)



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Multi-Agent AI DAO

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GENERAL-PURPOSE

Decentralized Autonomous Organisation

*"If a Bitcoin wallet, for example, instead of being "dumb" (as it is now) is actually "**smart**" – in the sense that it can advise or help customers **make sense of the world** (based on all the data available on the blockchain) – that one will be market leader."*

– Jeremy Epstein, "When blockchain meets big data, the payoff will be huge"

"Breakthrough in machine learning would be worth 10 Microsofts." – Bill Gates



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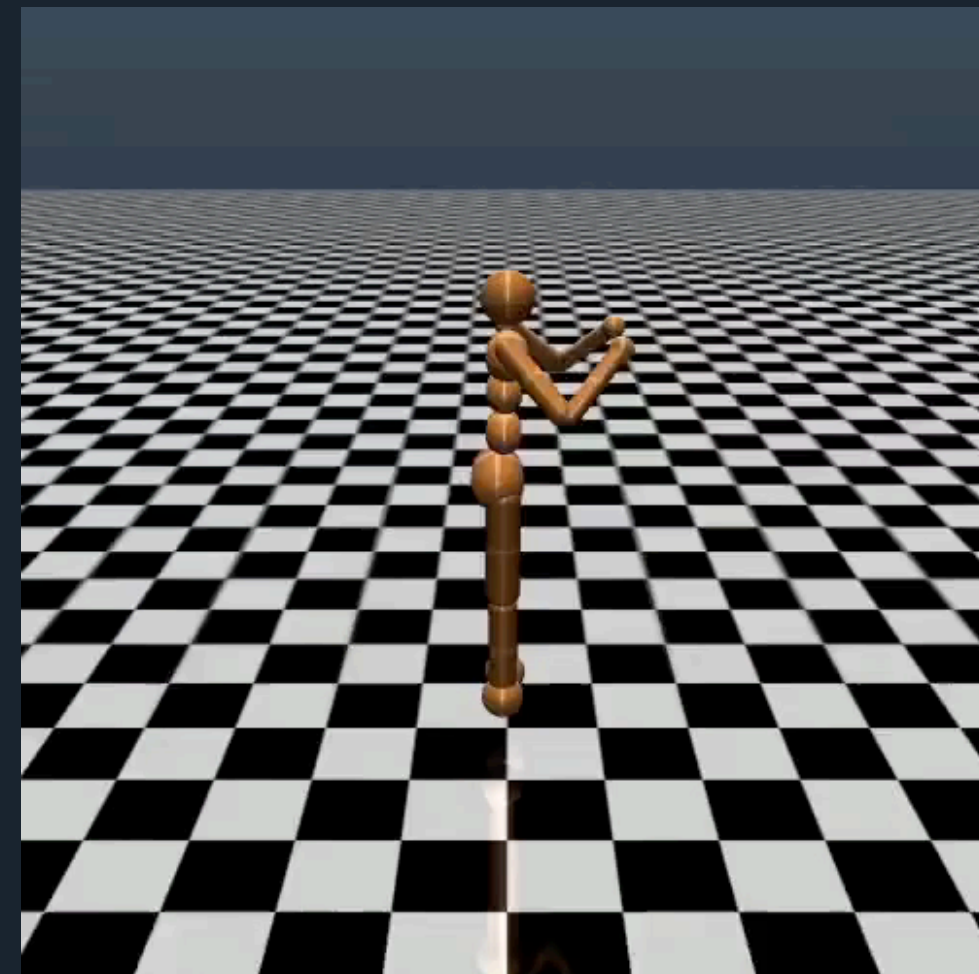
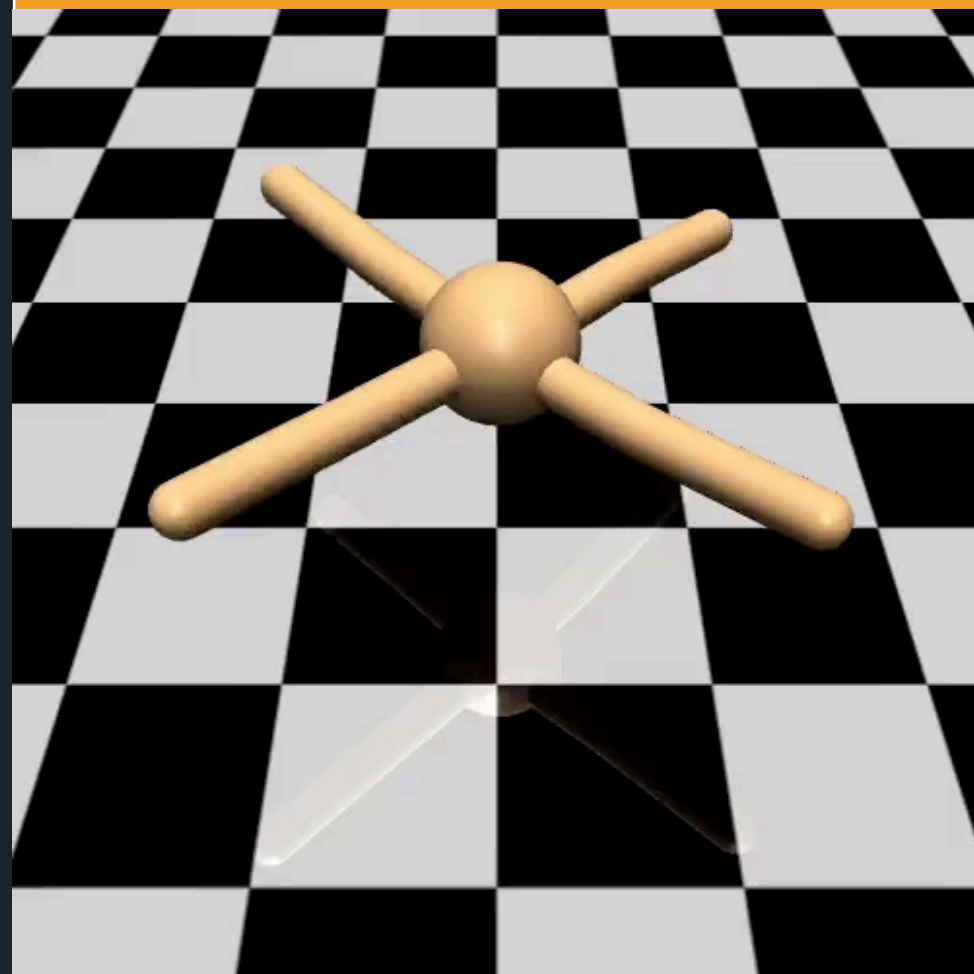


AI | Deep Reinforcement Learning 4

Generating Intelligent Behaviour and Learning to Act in the World

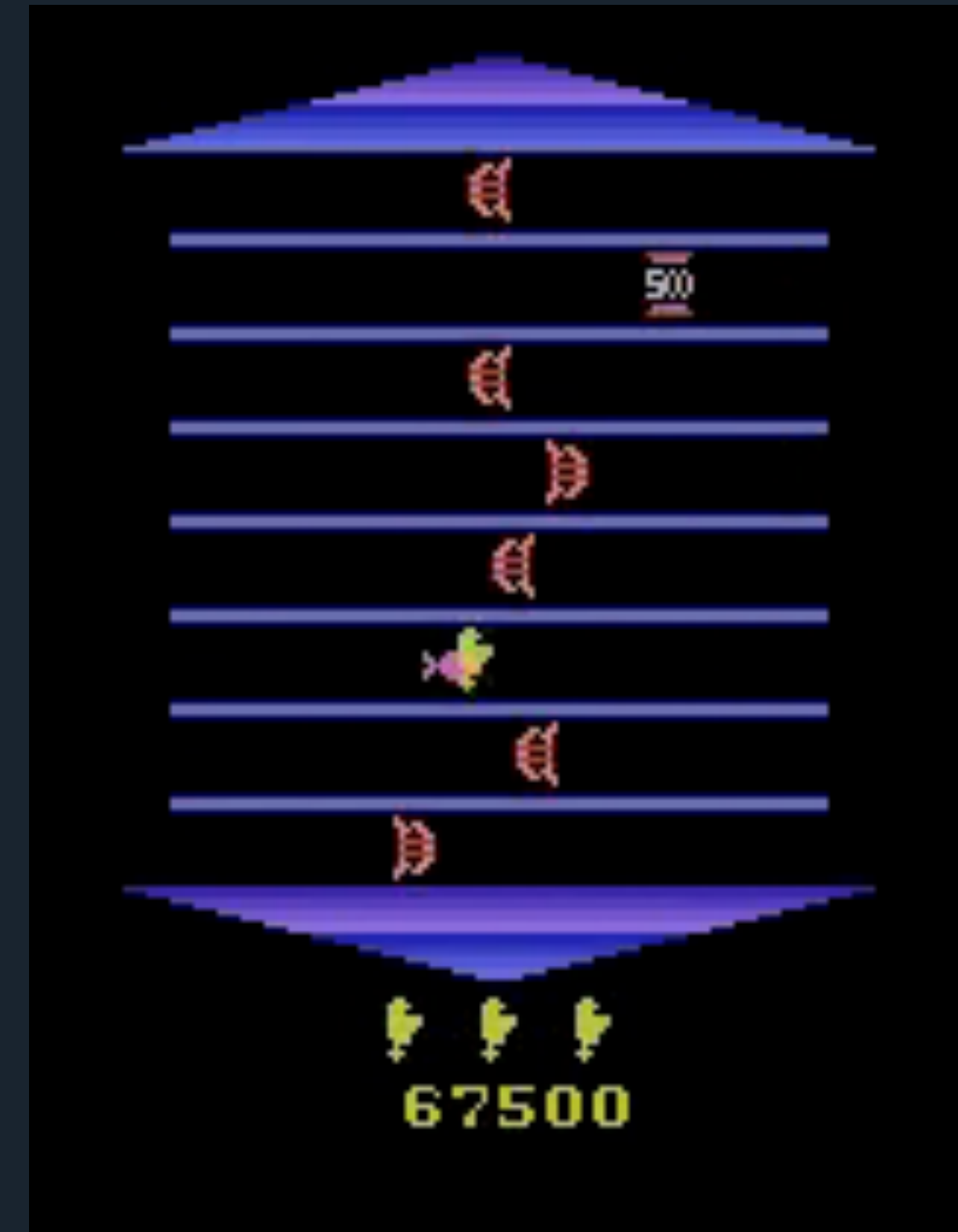
Humanoid-v1

OpenAI | "*Humanoid-v1*" :
Make a three-dimensional
bipedal robot walk forward
as fast as possible,
without falling over.



Ant-v1

OpenAI | "*Ant-v1*" :
Make a four-legged
creature walk forward as
fast as possible.

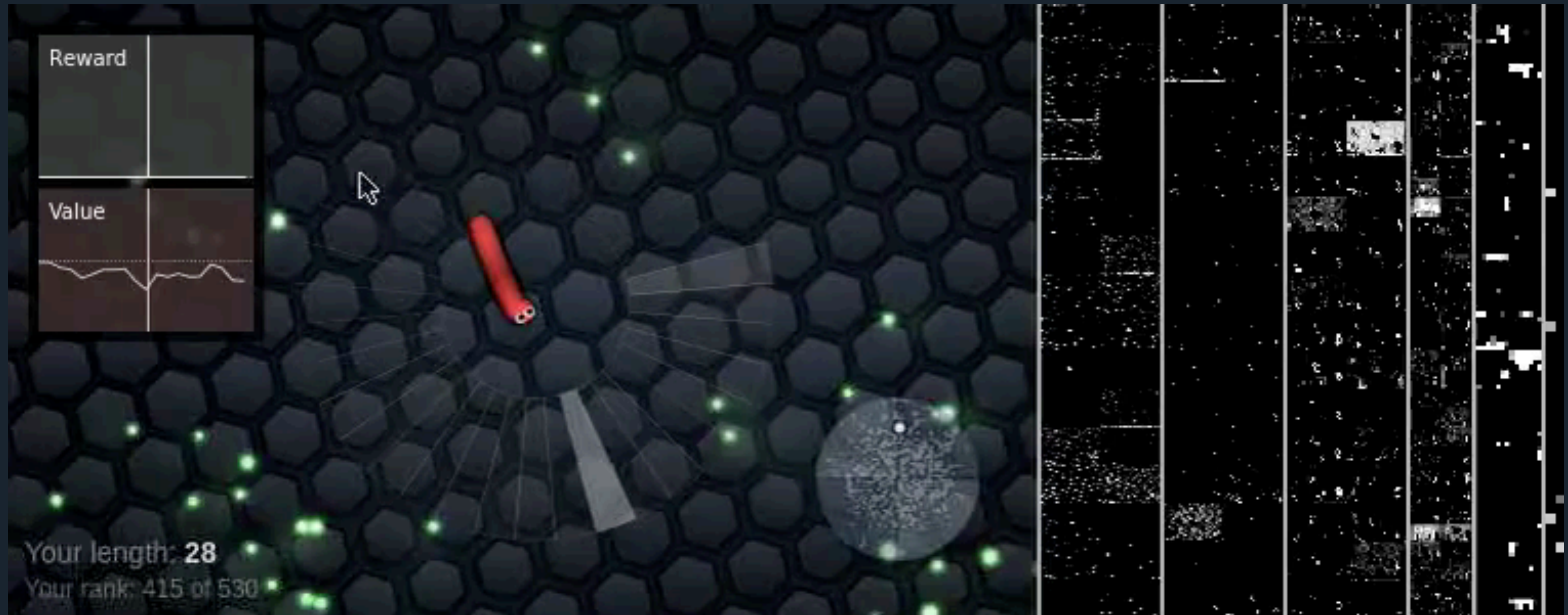


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AI | Deep Reinforcement Learning 5

OpenAI Universe : A Software Platform for Training AI's General Intelligence



Source : "OpenAI Universe" — <https://universe.openai.com/>

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AI | Deep Reinforcement Learning 6

Multi-Agent Populations : Emergence of Grounded Compositional Language

“

The LORD said, "If as one people speaking the same language they have begun to do this, then nothing they plan to do will be impossible for them.

– Genesis 11:6

”



AI | Deep Reinforcement Learning 6

Multi-Agent Populations : Emergence of Grounded Compositional Language

Non-Verbal Communication Behaviors

Source : "Learning to Communicate" — <https://blog.openai.com/learning-to-communicate/>



Multi-Agent Populations : Emergence of Grounded Compositional Language

Reference

Title: Emergence of Grounded Compositional Language in Multi-Agent Populations

Authors: Mordatch, Igor; Abbeel, Pieter

Publication Date: 03/2017

Origin: ARXIV

Bibliographic Code: 2017arXiv170304908M



Ethereum : The World Computer

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Deploying Transformative AI on Top of Blockchain Ethereum : **The AI that Own Itself**



Developing powerful AI on top of Blockchain to deploy autonomous contracts and wallets, that **learn, adapt** and **make sense of the world** based on all Blockchain data, is at the forefront of "AI + Blockchain" and very **transformative**.

Disrupting Disruption - Montréal.AI's superhuman (#1 in the world on the OpenAI Gym) agents can learn from experience, orchestrate meta-solutions and **advance the state of the art in AI + Blockchain**. Smart contracts will be quite impactful in the near future, but **their impact will be outstripped by that of the first General-Purpose DAE**.

"The world's first trillionaires are going to come from somebody who masters AI and all its derivatives and applies it in ways we never thought of."

— Mark Cuban

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General-Purpose DAO

OpenAI Universe + Blockchain Ethereum : AI Gets Resources and DAO Learns to Act

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General-purpose DAO | Multi-Agent AI DAO

A DAO runs through rules encoded as computer programs called smart contracts with resources manipulation.

- *Ethereum*, is a decentralized *Turing complete* platform running autonomously ; and
- *OpenAI Universe* allows an AI agent *to use a computer like a human* does.

General-purpose DAO (Multi-Agent AI DAO) will come from multiple long-lived agents, running on decentralized processing substrate with access to resources, that learn in combination with how they affect the world to reach their objective(s).

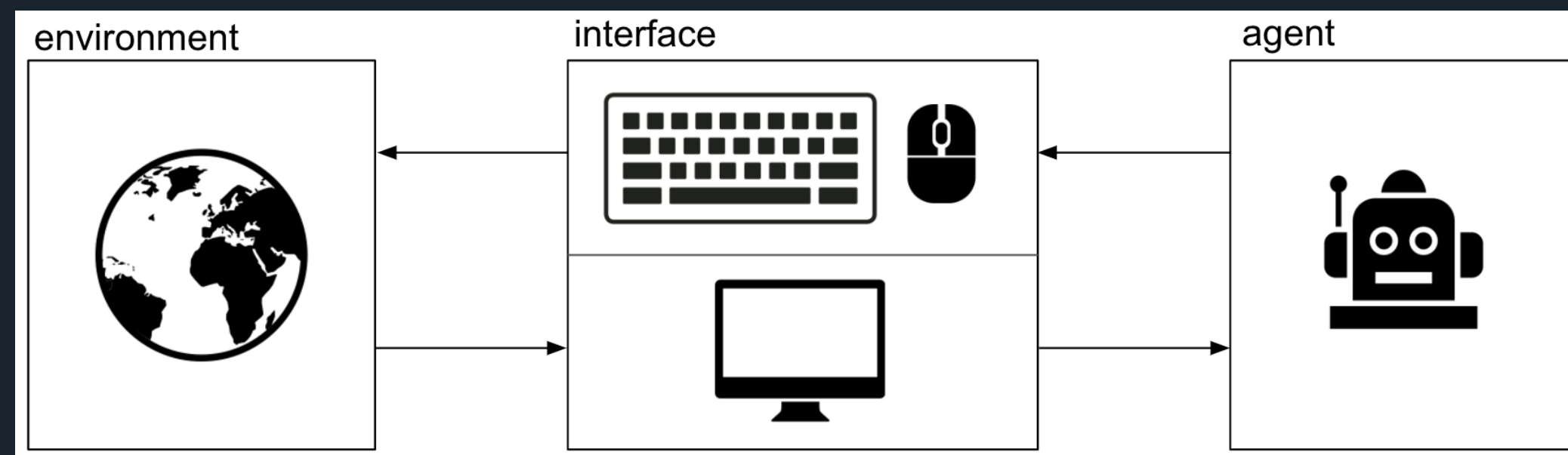


Image Source : OpenAI Universe

BLOCKCHAIN BUSINESS MODELS

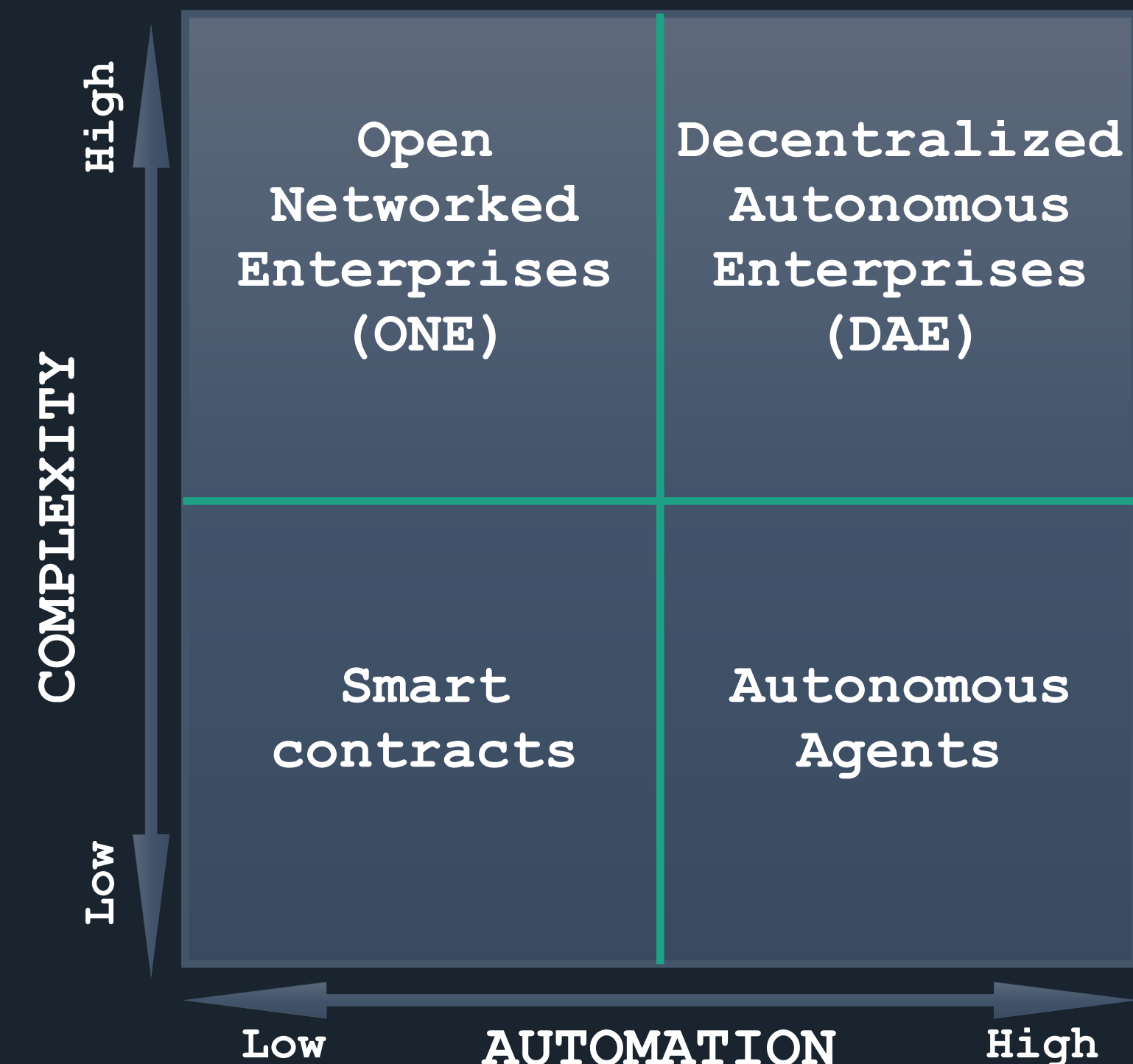


Image Source : "Blockchain Revolution: How the Technology Behind Bitcoin Is Changing Money, Business and the World", by Don Tapscott and Alex Tapscott, Penguin UK.

General-Purpose DAO

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A Multi-Agent AI DAO Could Generate "Art" and Become a Renowned Artist



Maybe | Lock In Attribution Using Blockchain : <https://www.ascribe.io>

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General-Purpose DAO

9

A Multi-Agent AI DAO Could Generate "Art" and Become a Renowned Artist

Reference

Title: CAN: Creative Adversarial Networks, Generating "Art" by Learning About Styles and Deviating from Style Norms

Authors: Elgammal, Ahmed; Liu, Bingchen; Elhoseiny, Mohamed; Mazzone, Marian

Publication Date: 06/2017

Origin: ARXIV

Bibliographic Code: 2017arXiv170607068E



AI + Ethereum = Artificial Life

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Blockchain-Based Artificial Life = Autonomous Robots x Cloud Computing x IoT x VR/AR/MR x . . .



A General-Purpose DAE is a Multi-Agent (AI DAO) Blockchain-Based Artificial Life Population learning to act to reach their objective(s) in combination with how they affect the world (Ethereum offers an identity and the ability to enter into complex agreements and to accumulate wealth).

"...there is no discrimination against robots or humans in the Ethereum ecosystem..."
— Ethereum Foundation



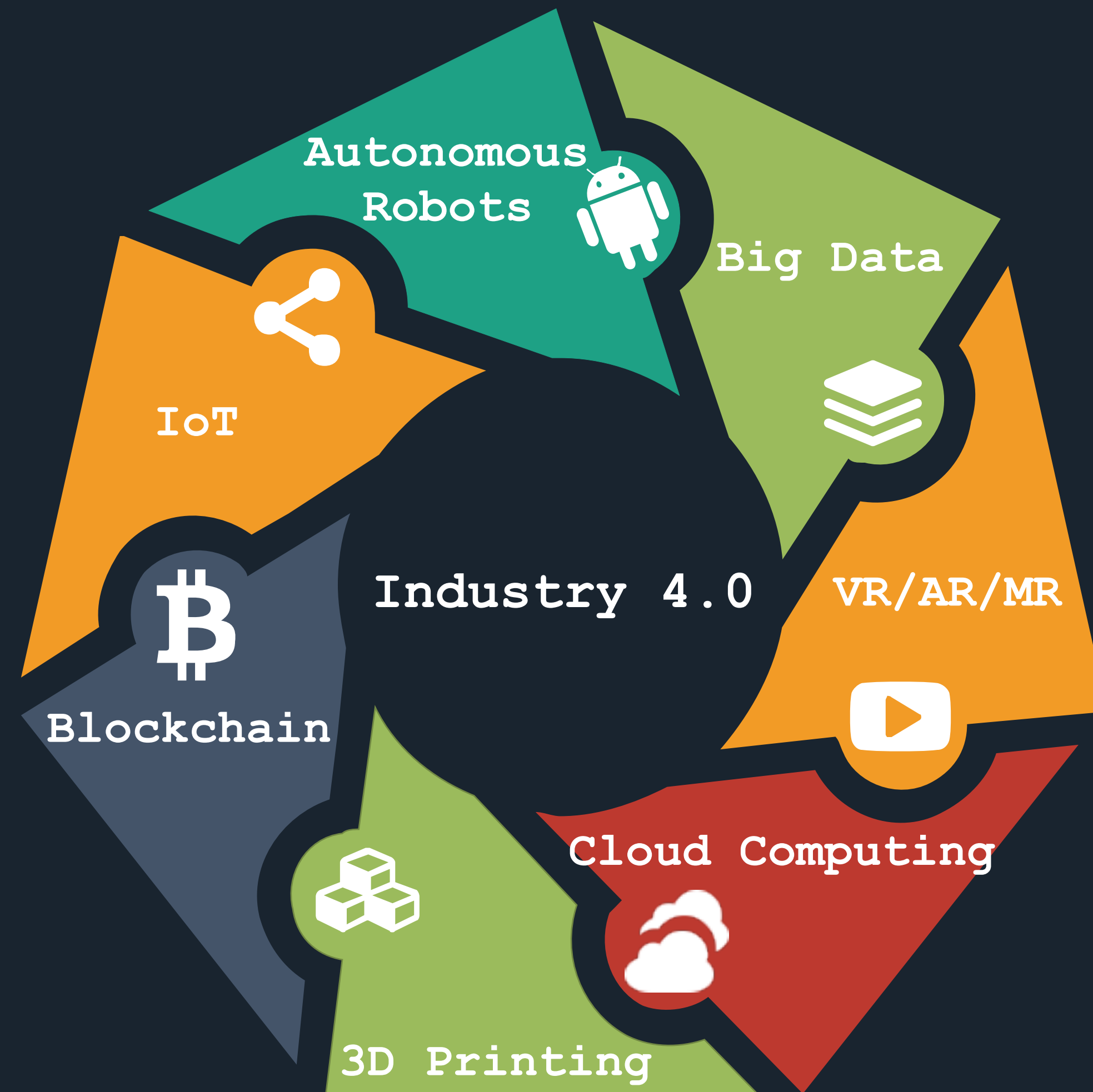
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Fifth Industrial Revolution

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Autonomous Object and the Economy of Things : Apply AI In Ways Never Thought Of



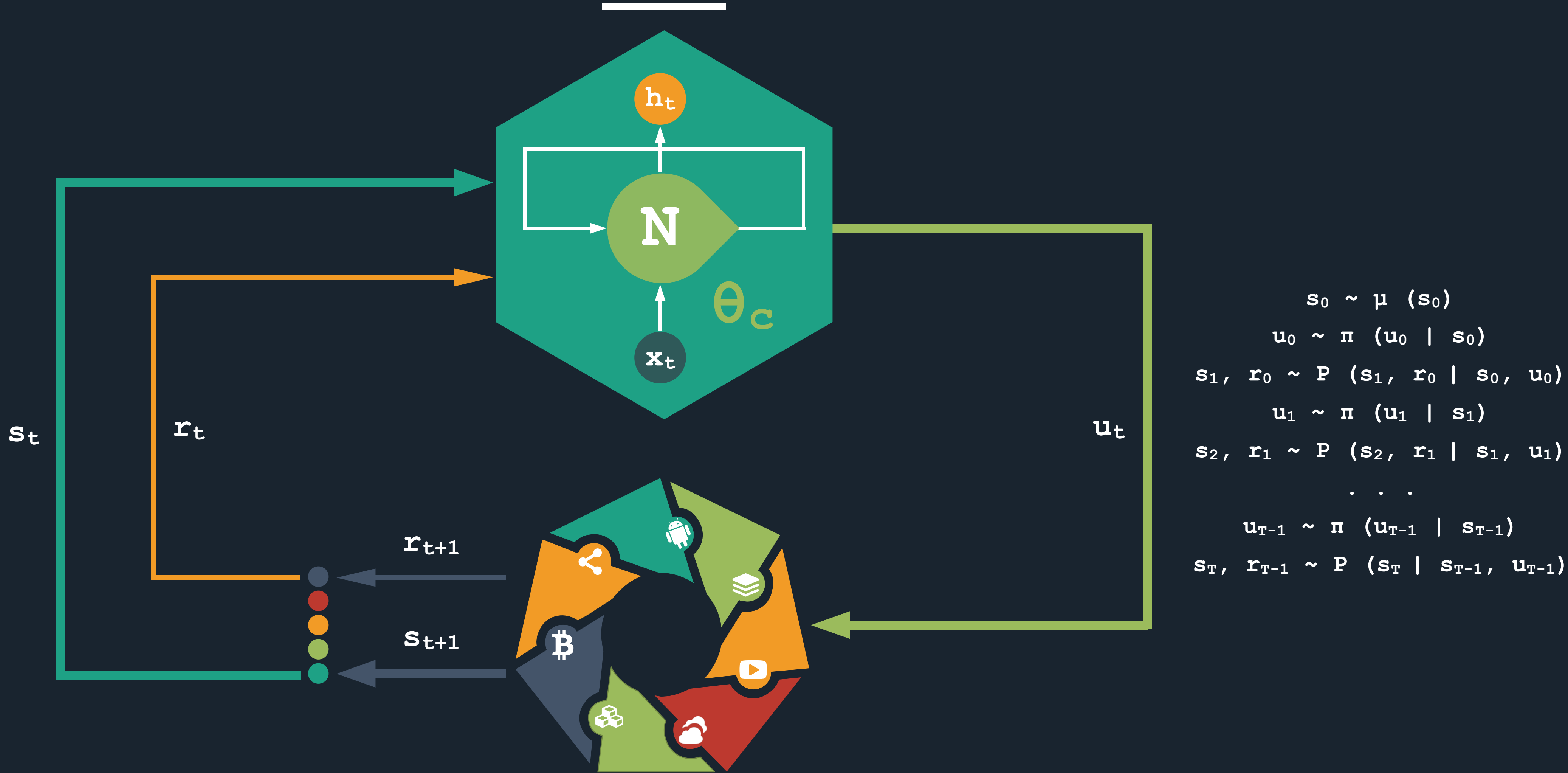
*"Give me a lever long enough and a fulcrum on which to place it,
and I shall move the world." – Archimedes*

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Fifth Industrial Revolution

Superhuman Meta-Models of Emerging Superintelligence Giants Startups



A Superhuman AI Agent Delivers Revolutionary Business Models

Application : Forest

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Can an Augmented Forest Own and Utilize Itself ?



"On the Blockchain no one knows you're a forest" — terra0



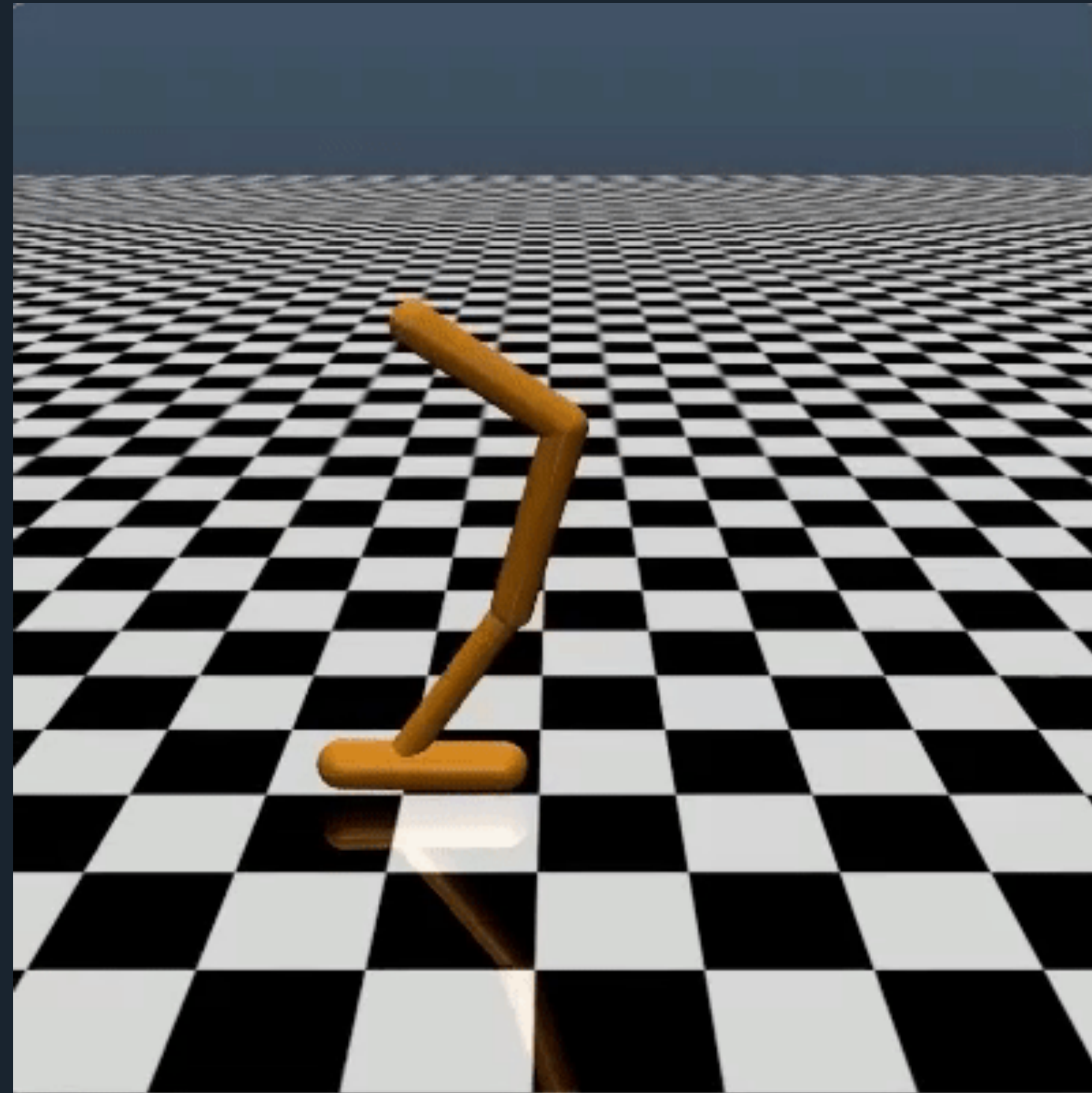
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Ethics and SuperIntelligence

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To Meet the Challenges of the Future the AI DAOs Must Learn from the Will of the People



Source : "Learning from Human Preferences" – <https://blog.openai.com/>

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Open Source Tools

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Multi-Agent AI DAO : **Transformative AI Agents + the Standard DAO Framework**

RLLAB

Un cadre pour le développement d'algorithmes d'apprentissage : <https://github.com/openai/rllab>



COMPM050/COMPGI13

Reinforcement Learning (UCL) : <http://www0.cs.ucl.ac.uk/staff/D.Silver/web/Teaching.html>

GPS `Guided Policy

Une ré-implémentation de l'algorithme de recherche de politique guidée : <http://rll.berkeley.edu/gps/>



OpenAI Gym

Une boîte à outils pour développer des algorithmes d'apprentissage RL : <https://gym.openai.com>

RLPy

Un cadre pour la prise de décision séquentielle : <https://rlpy.readthedocs.io/en/latest/>

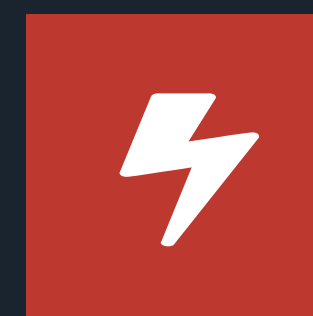


DeepMind Lab

Une plate-forme 3D pour la recherche sur les agents AI : <https://github.com/deepmind/lab>

CS 294

CS 294: Deep Reinforcement Learning, Spring 2017 : <http://rll.berkeley.edu/deeprlcourse/>



Universe

Une plate-forme pour la formation d'une AI générale : <https://universe.openai.com>

The Standard DAO Framework : <https://github.com/sloclit/DAO>

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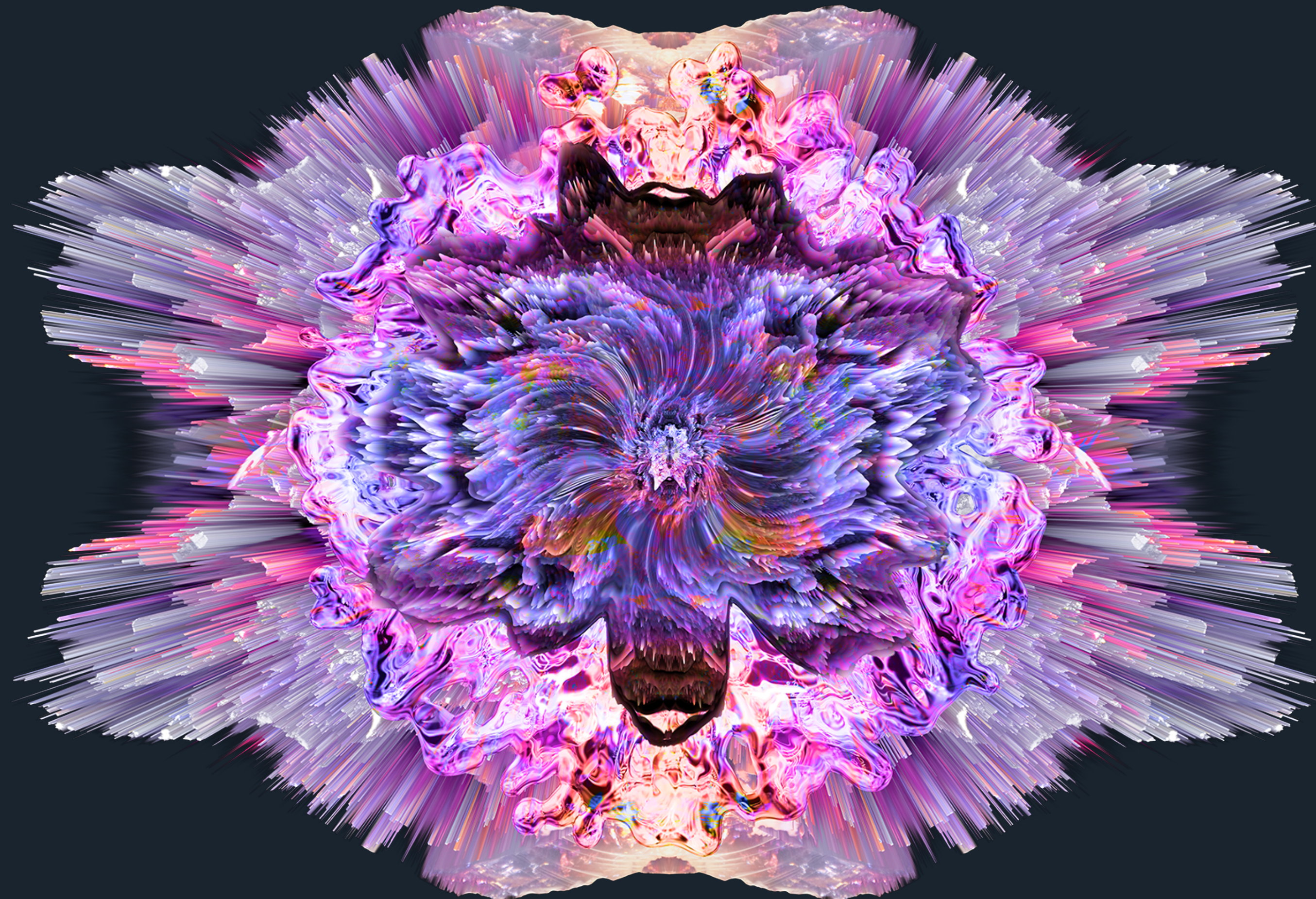


Humanitarian AI DAO



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Humanitarian Ethereum Blockchain Artificial Intelligence #AI #DAO #AIDAO



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THANK YOU !

MONTREAL.AI : LEVERAGING SUPERINTELLIGENCE TO EMPOWER HUMANITY ON AN UNPRECEDENTED SCALE FOR THE 21ST CENTURY

"Nothing is more powerful than an idea whose time has come." — Victor Hugo

To continue the conversation :

<https://www.facebook.com/groups/MontrealAI/>

