

NEXUS.Q

Quantum Circuits

A new foundational AI based on swarm intelligence for designing and building quantum circuits

 **maXamlabs.io**



THE PROBLEM

“Every one of us knows someone whose life has been changed by illness, sometimes in an instant, sometimes over years of struggle.

Today, the world stands on the edge of a medical revolution. AI has already begun to accelerate discovery, but the tools we currently rely on are sometimes limited and progress can be slow.

The toughest diseases, the most complex health challenges, demand more than incremental progress; they demand a leap. We taking that leap.

*We are building **NEXUS.Q**”*

David Gammond - CEO



QUANTUM AI

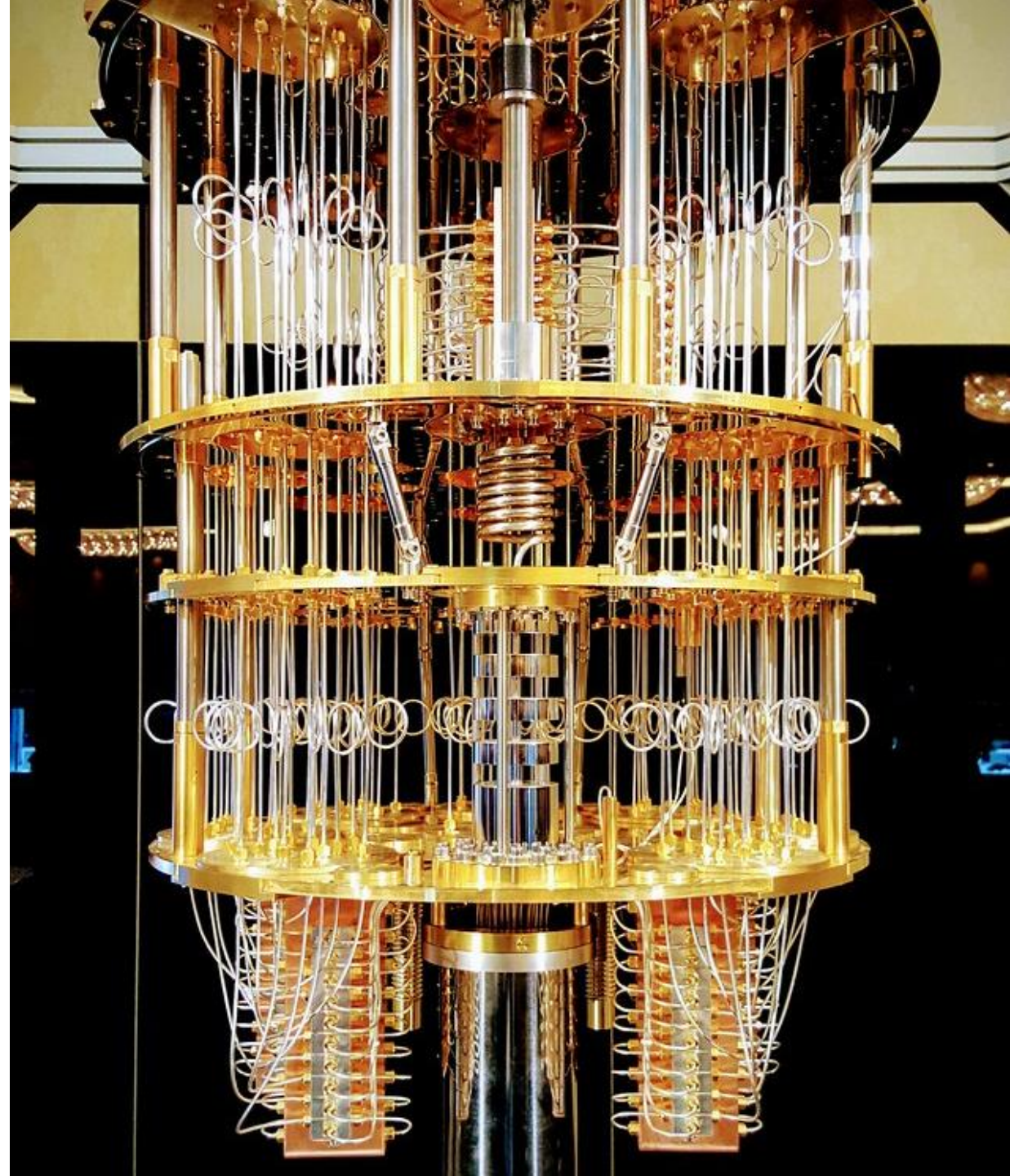
Using our foundational artificial swarm intelligence to build quantum circuits offers three key advantages for medical science:

Quantum-accelerated collaborative learning enables decentralized, privacy-preserving analysis of medical data, enhancing disease detection through parallelized multi-modal processing;

Quantum-optimized problem-solving rapidly resolves complex challenges like drug discovery and treatment planning using quantum swarm algorithms, achieving unprecedented precision;

Scalable quantum-security combines decentralized governance with quantum encryption to securely analyse global genomic/clinical datasets, ensuring compliance and cybersecurity.

This synergy creates a transformative platform for precision medicine, delivering energy-efficient, real-time solutions while maintaining data security.



HOW IT WORKS

We have shown that emergence* is created by the **NEXUS** architecture, using an environment filled with what we call Dants (Digital Ants). Running their evolution at thousands of times natural speed, we have created an intelligent, creative AI capable of solving real world problems.

Mathematical, analytical and optimization problems can be input into **NEXUS**. These problems include supporting the creation of innovative quantum circuits.

The Dants swarm around the problem to discover the most efficient path to a solution, working together they create chains of processes. These chains are then used to solve the problem creating the output.

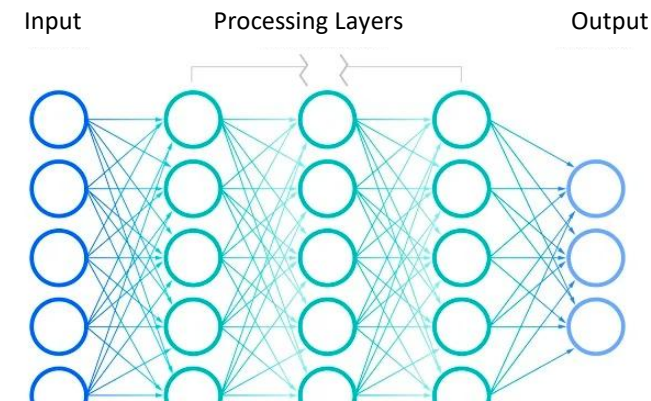
NEXUS is a core technology which creates artificial intelligence in a completely different way to generative AI or LLMs. We have found that by utilizing the power of emergence, **NEXUS** is able to evolve original, efficient solutions.

*Emergence occurs when a complex entity has properties or behaviours that its parts do not have on their own and emerge only when they interact in a wider whole.

Typical generative AI architecture comprises of a network of neurons (nodes). These neurons are linked together using parameters.

Input is passed through the processing levels, which make decisions to create an output that is based on training data.

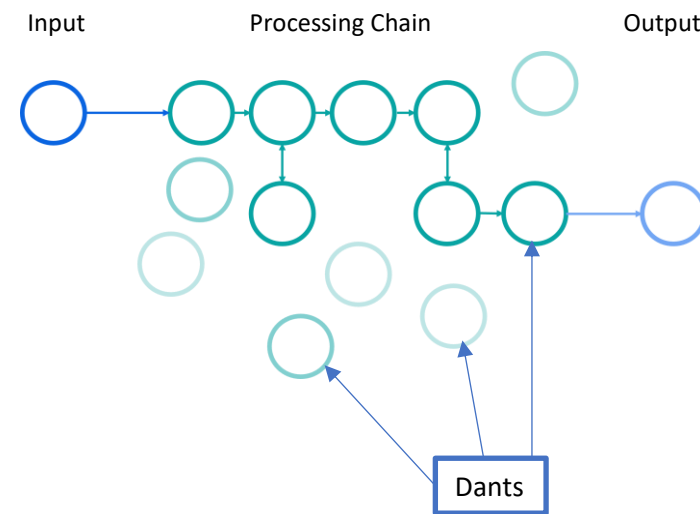
This architecture is very good at processing text but lacks ability when processing complex math.



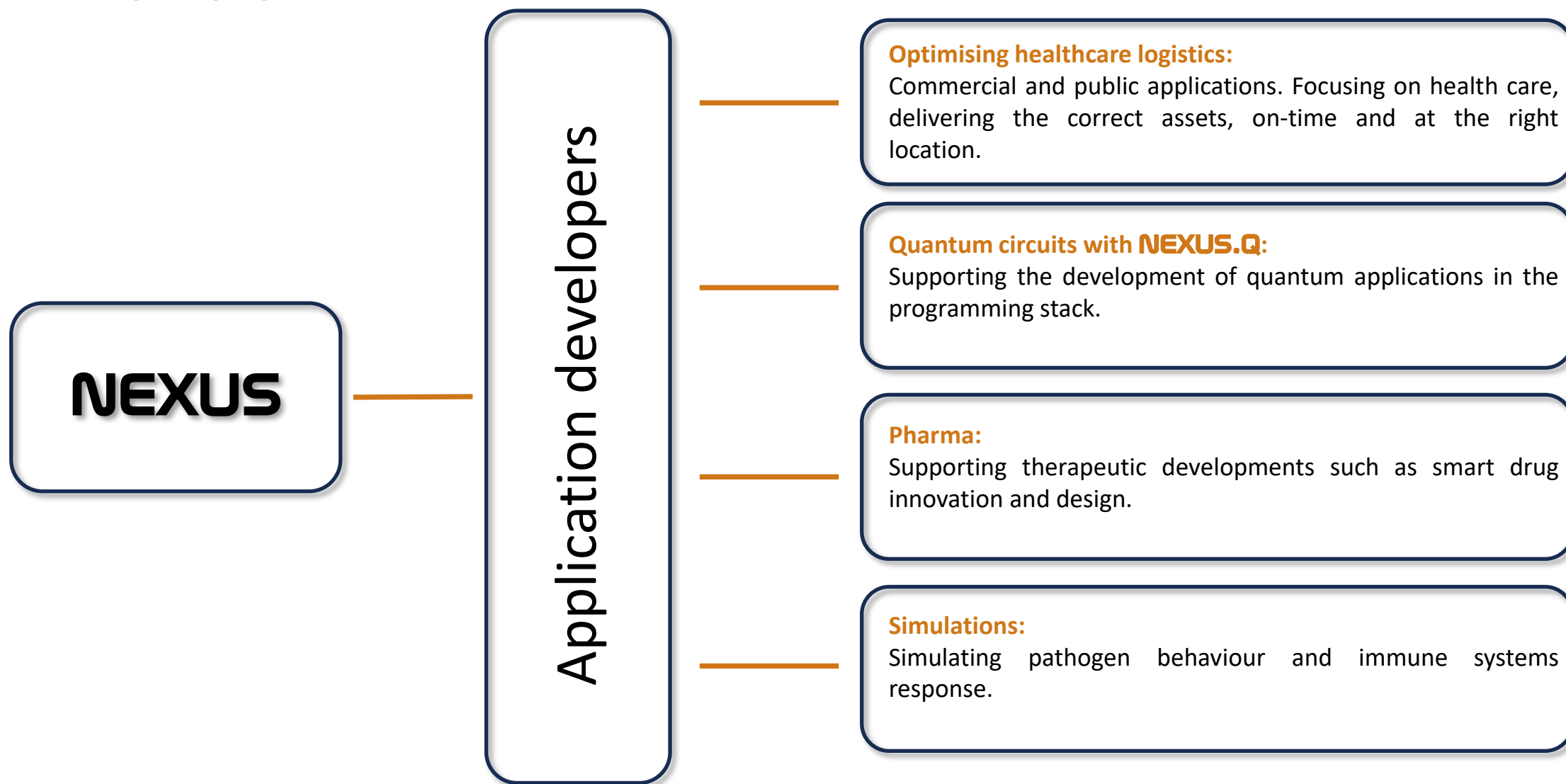
In **NEXUS** dants are created with differing mathematical skills and other attributes, such as the ability to call on external AI models and other services.

Driven by the input, the dants swarm and stick together to form processing chains. The chains are created through a set of rules that trigger complex computational emergence.

Once the most efficient processing chains possible are created the remaining dants are removed from the system until again needed.

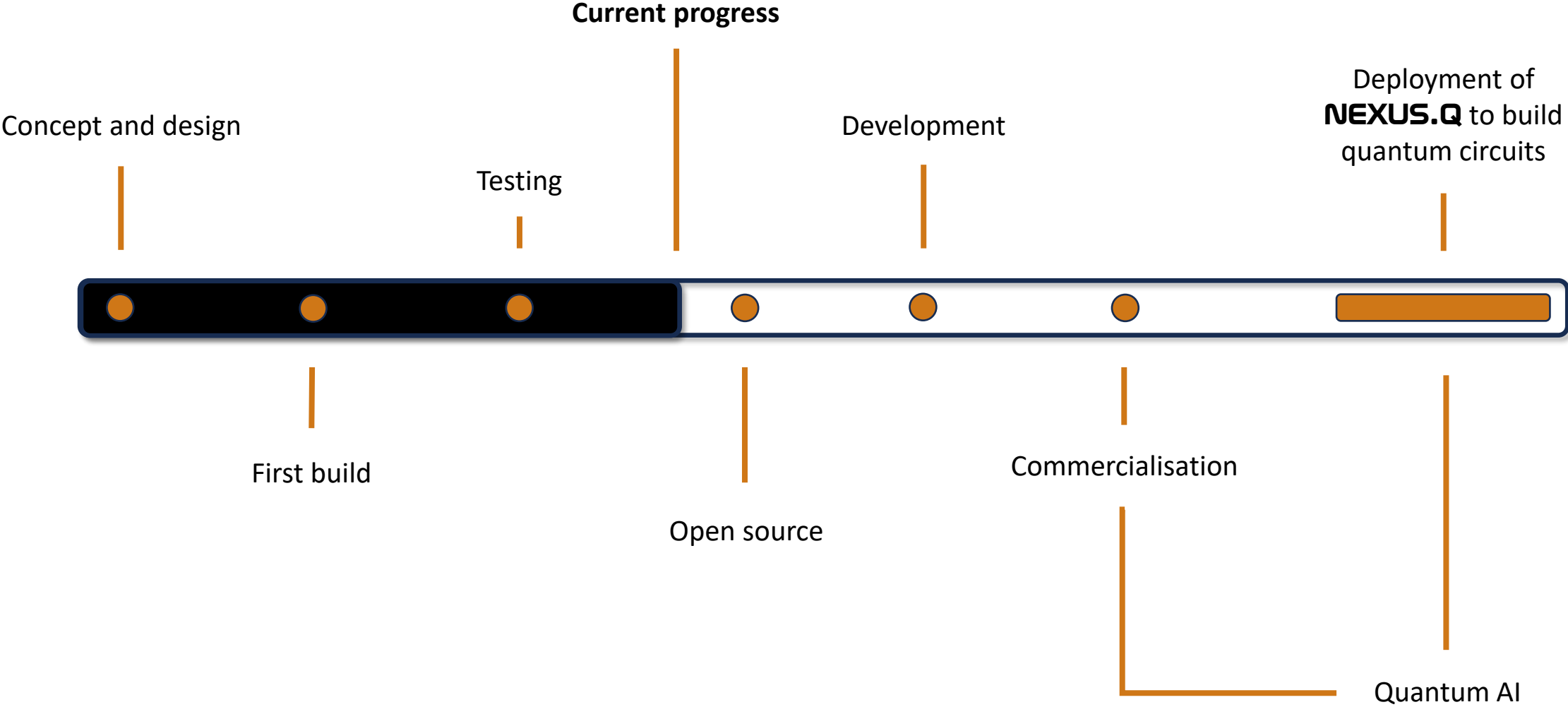


APPLICATIONS



These are a sample of the large number of applications that can be powered by **NEXUS**.

OUR JOURNEY



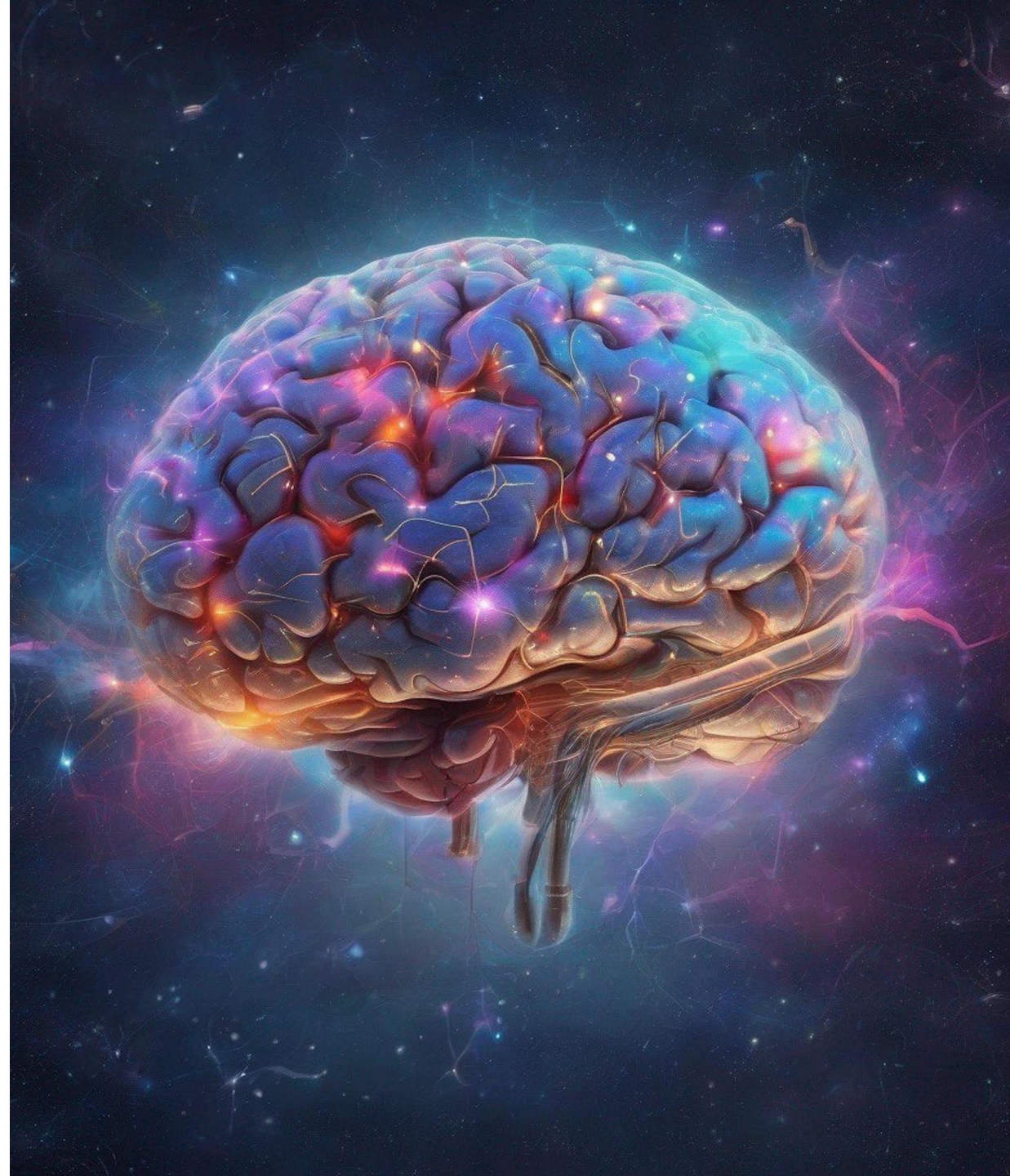
NEXUS.Q - QUANTUM AI

We believe that quantum applications designed using our technology will have the ability to comprehend what it is doing and why it is doing it. Through this understanding, it will have a much greater potential to solve highly complex problems.

We expect that the quantum circuit building version of **NEXUS** will comprehend a problem given to it in a way that no other AI model has yet been able to achieve. This is possible because of the power within emergent complexity.

NEXUS.Q will have the ability to create complex quantum circuits that are made up of much simpler component parts, as is the case in nature. It is an evolutionary AI.

Enabling **NEXUS.Q** to build applications for quantum computers will allow for unparalleled advancements towards solving some of mankind's most "unsolvable problems".



JOIN US

We need your support so that we can continue to develop **NEXUS.Q**

Sponsorship: Make a financial contribution each month in support of our work.

Resources: We need access to medical research, compute facilities and application developers.

Consultancy: Help guide the development of **NEXUS.Q** by joining our team, freely contributing your time and experience.

Grant funding: We have received grant funding in the past, help us to secure more.

The adaption of our foundational AI to design and build quantum circuits is being supported by:



FOUNDERS



David Gammond
Chief Executive Officer

I have worked in the computer industry for over 40 years, supplying computer technology to both large and small companies. Past projects include data capture rigs for particle accelerators, manufacturing systems based on IBM MAPICS, biotechnology and office automation.

For almost 30 of those years, I have been fund raising for tech projects and companies. These include renewable energy, biotechnology, broadcasting, fintech and SaaS providers.

I am based in Manchester, England.



Brandon Lin
Chief Science Officer

I have a MEng in Computer Science. Formally educated in cloud architectures, artificial intelligence, machine learning, deep learning, image processing, computer vision, and high-performance computing, I wrote my dissertation on Computational Psychology, the study of how and why deep learning neural networks interoperate data, and what that means for machine learning models.

I am a full stack developer with extensive programming, networks and cloud experience.

I am based in Bristol, England.

We are supported by:

OTS Capital – www.ots-capital.com

GM Business Growth Hub - www.businessgrowthhub.com

The National Physical Laboratory – www.npl.co.uk

Without their valued support building **NEXUS.Q** will not be possible.

We are also funded by our commercial operations, through which we provide our clients with leading solutions using AI technology.

Visit our website to learn more: www.maxamlabs.io

YouTube videos on this subject which you might find interesting:

<https://www.youtube.com/watch?v=16W7c0mb-rE&t=38s>

<https://www.youtube.com/watch?v=LHgVR0lzFJc>

<https://www.youtube.com/watch?v=U93x9AWeuOA>



CONTACT US:

Maxam Labs Ltd

Highland House, Highlands, Royton, Greater Manchester, OL2 5HP, United Kingdom

mail@maxamlabs.io