SKYLEAP
INDUSTRIES INC.

NomadAI

# ARCHITECTURE TO SOLVE ARTIFICIAL GENERAL INTELLIGENCE (AGI)

CORPORATE PRESENTATION | Q2 2024

SKYLEAP.CA

# DISCLAIMER

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# INTRODUCTION

Skyleap Industries Inc. has developed a novel AI technology based on the principles of natural brain function, closely resembling its structures.

NomadAI is a breakthrough that possesses the capability to surpass current AI technology, becoming the cornerstone upon which future Generative AI advancements will be built upon.

Join us in shaping a future of safe and foundational Artificial General Intelligence (AGI).

SKYLEAP INDUSTRIES INC. | NomadAI

# ABOUT SKYLEAP INDUSTRIES INC

NomadAI is the building block for Artificial General Intelligence, and foundational to the next era of Generative AI.

## CURRENT AI

- Relies on digital remodels that require coding input and retraining
- High energy demand & cost during model retraining and querying.
- Sophisticated AI models require cloud & internet, exposure to security compromises

## NOMADAI

- Neuromorphic computing with capacity for self-learning with minimal intervention
- Significant reduction in energy required for computation
- Independence from cloud & internet, hrough neuromorphic properties with vast storage

Google LUNAR XPRIZE

Skyleap pushes innovation to new heights. The founders behind Skyleap were recognized in the Google Lunar XPRIZE expedition, the company draws from its experience in the Space and Cryptography industries. The collective companies made advancement in pulsar signal processing for navigation and decentralization of advanced encryption. Following years of research and development, Skyleap has developed NomadAI with the intent to counter and surpass Large Language Models like ChatGPT and to usher in the next era of Generative AI. The development of NomadAI spans more than three decades of research, analysis, and precise mathematical implementation.

## VISION

To provide disruptive Generative AI to assist daily life in both business and pleasure.

## MISSION

To help businesses leverage AI to benefit operations, increase revenue, and personalize the customer experience.

# INVESTMENT HIGHLIGHT

## PROPRIETARY TECHNOLOGIES

### NomadAI – AGI Architecture
Compute of linear and nonlinear waves Encoding dynamic videos Long-term memory consolidation

### SPEAK – Advance Encryption
Adheres to FIPS 140-2/3 standard Symmetric encryption algorithm Quantum safe cipher

### Decentralized Server Nodes
Advance Encryption Standard Anonymous client-server auth. Man-in-the-middle protection

## IP INSIGHT

- 30+ years R&D and implementation of neuromorphic computing, NomadAI solves industry bottlenecks in computing power, inference, and dynamic visual processing.
- To account for advancements in quantum computing SPEAK was made to safeguard NomadAI and any IP, technologies, and sensitive customer data.
- This decentralized technology allows Skyleap the access to GPU hardware, circumventing infrastructure costs faced in the industry today.

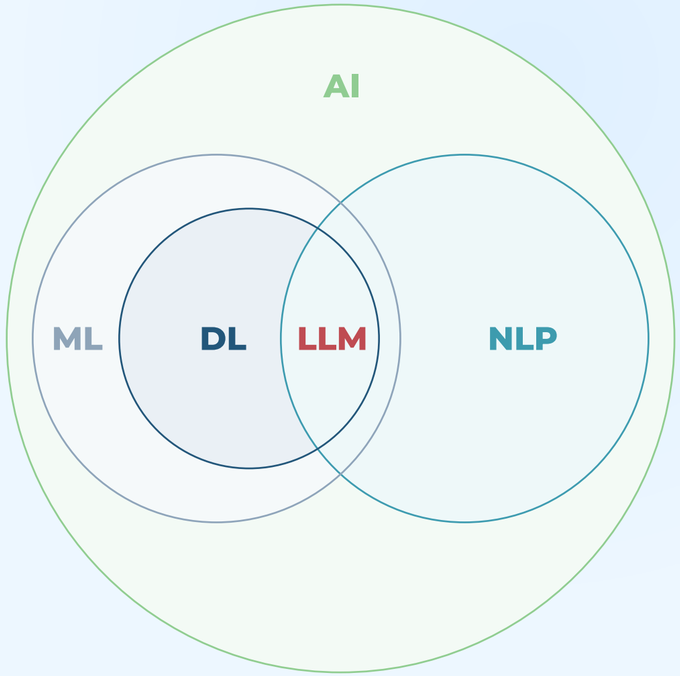
# ARTIFICIAL INTELLIGENCE MARKET AND API SECTOR GROWTH

Popular Large Language Models (LLMs), such as ChatGPT, are based on transformer technology, the advancements in which have led to leaps within the Artificial Intelligence industry. Companies such as Amazon and Google are prioritizing capital to acquire leadership in the AI marketplace. North America alone spent nearly 140B USD on AI in 2022.

Market demands gravitate towards Generative AIs that have Artificial General Intelligence (AGI) capabilities within their models allowing the Artifi cial Intelligence to be adaptable. This demand is proven by the quest to secure billions of dollars worth in hardware infrastructure by large AI companies.

| COMPETITORS | PRODUCT NAME | CAPITAL INVESTED |
|---|---|---|
| Microsoft (investor) | ChatGPT (openAI) | 14B+ |
| Amazon | Anthropic | 9B+ |
| Elon Musk | Grok | 200M+ |
| Meta | Llama2 | 20M+ |
| Google | Gemini | Unknown |

## TERMS




**AI** - Artificial Intelligence
**ML** - Machine Learning
**DL** - Deep Learning
**NLP** - Natural Language Processing
**LLM** - Large Language Model

# COMPETITIVE ADVANTAGE OF NOMADAI DURING MODEL TRAINING

**NomadAI outperforms** industry standard for the xOR benchmark problem, **reducing the amount of epochs necessary to train the AI model**

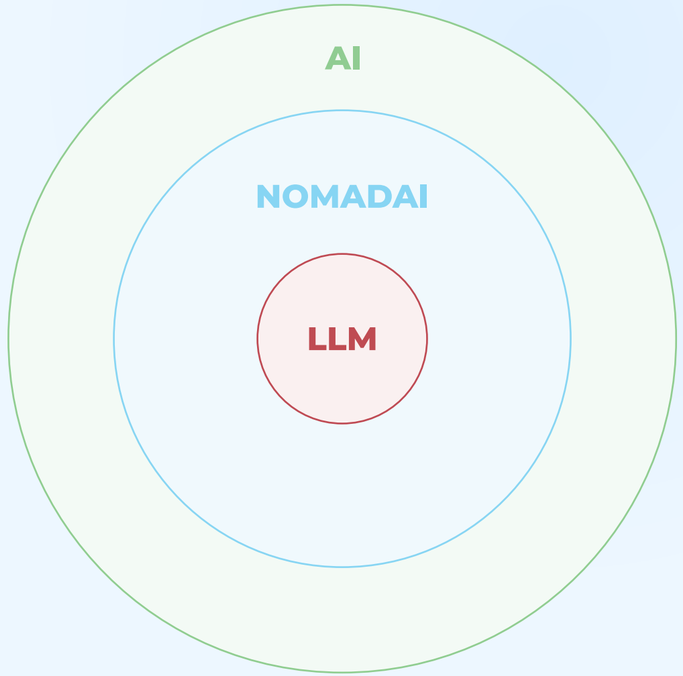
| | CURRENT AI | **NOMADAI** |
|---|---|---|
| BENCHMARK | 200 EPOCHS | 8 EPOCHS |

*One epoch = neural network pass (traversal ) during training

The technology opens the following possibilities:

- Capacity for the AI to make conclusions based on new evidence and reasoning with minimal human intervention.
- Reduction of electrical power consumption experienced by Language Models. At an annual rate, the AI industry loses tens of millions of dollars worth in computing power to run Generative AI and deep learning infrastructures. Skyleap helps LLMs and Generative AIs alleviate that loss by supplying them with a new architecture.
- Compact hardware containing AI on its device that does not require cloud, internet, or satellite connectivity; a game changing technology made possible with neuromorphic computing which allows vast storage within its membrane.

## WHERE NOMADAI WILL FIT




Replaced by NOMADAI

- **AI** - Artificial Intelligence
- **ML** - Machine Learning
- **DL** - Deep Learning
- **NLP** - Natural Language Processing
- **LLM** - Large Language Model

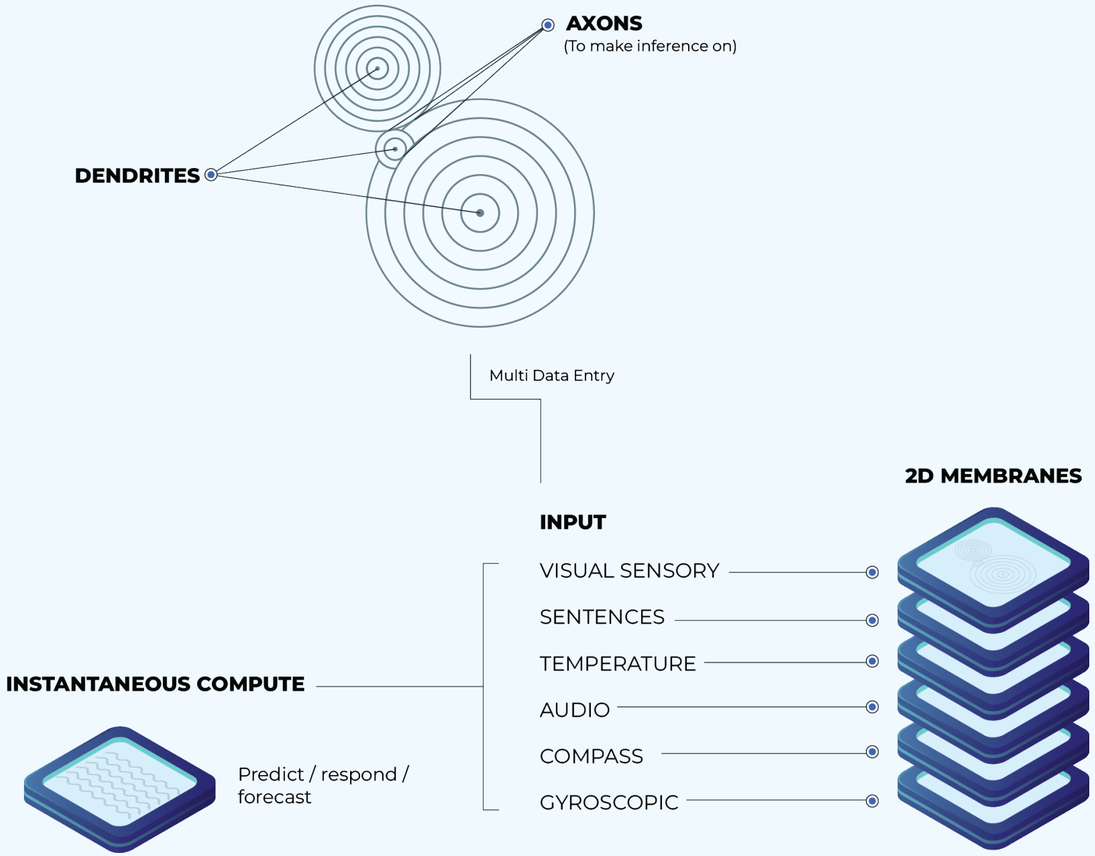
# HOW IS THIS MADE POSSIBLE?

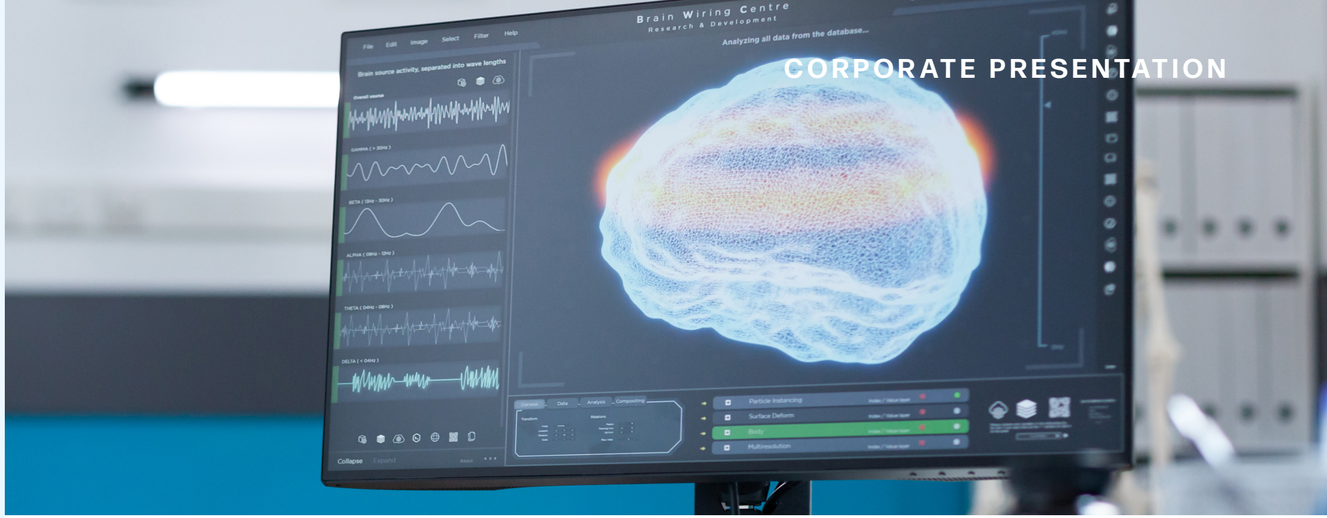
Skyleap implemented NomadAI software to use waves when injecting data into its abstracted 2D membrane. Think of this membrane simply as a container filled with water. Just as raindrops create a rippling effect in water, NomadAI's membrane absorbs each drop and retains it. Each drop, acting as an event, produces waves that appear as ripples. When one wave intersects with another wave their amplitudes are summed. This is how NomadAI is able to observe the cause and effect of each event to produce correlation from the sea of waves.

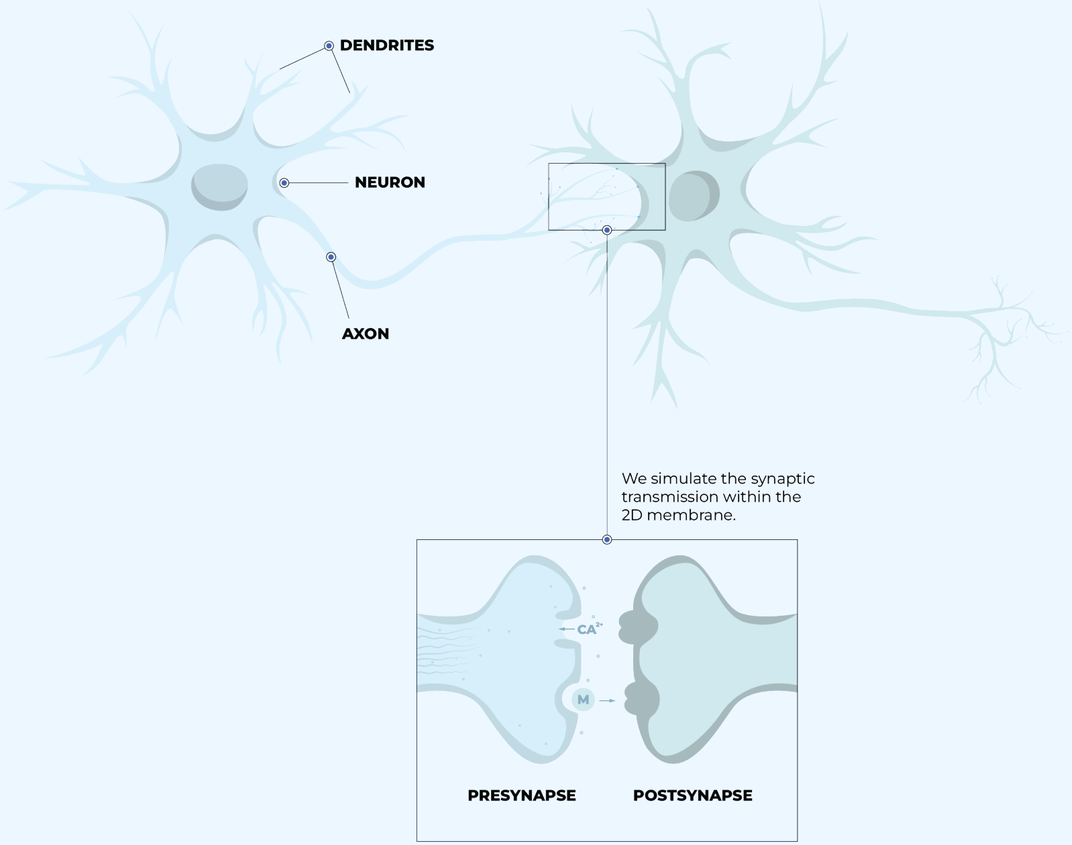




## NOMADAI - OCEAN OF WAVES






# HOW DOES NOMADAI ENCODE DATA AND FORM NEURONS IN WAVEFORM?

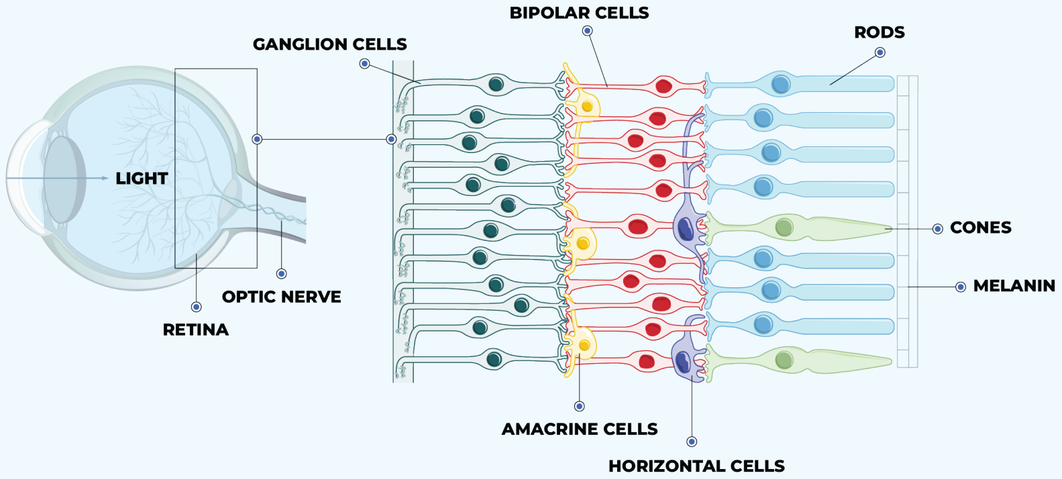
Think of each raindrop as an event representing some digital data. When a raindrop creates a ripple, its digital data is converted into a wave. Once the digital data is converted it continues to exist within the membrane as a nonlinear wave.

Over time the membrane retains enough events to begin forming the basis of a neuron.

Subsequently a set of raindrops will begin to form scenarios equivalent to a neural network.

A set of raindrops can be canceled by the inversion of their waves. By countering those set of raindrops, NomadAI's membrane forms the first neural networking connections because it knows where the raindrops will lead in their ripples.

## RETINA CELLS & RECEPTORS




NomadAI gained the sensory of sight that captures the physical world better than existing generative AIs on the Market.

Ref Appendix I top left image

# NOMADAI TECHNOLOGY: WHY IS THIS SO SIGNIFICANT?

Currently, all industry AIs work within digital neural networks, so why is it important to work in a membrane filled with analog data instead of simply using existing digital neural networks?

- Analog signals allow real-time calculations of their analog data when the signals are at an intersect (superposition), at a reduced computational power consumption
- Natural phenomena within a neocortex allows superior storage of data within NomadAI's membrane, outperforming digital storage

Working in analog within a neural network isn't a 10x or 1000x victory, it becomes an expanding X advantage as Generative AI models enhance, evolve, and grow exponentially, requiring even larger operational expenditures.

Skyleap has implemented a neuromorphic membrane within NomadAI's software, that can operate in wave, thermal, static pressure, and shock nonlinear waves.

Advancing a step further than academia in the neuromorphic computing field by:

- Encoding full pictures into the membrane, giving NomadAI the sensory of sight
- Storing data within the membrane to consolidate long-term memories.
- Successfully summed nonlinear wave events.
- Storing vast amounts of data in nonlinear form compared to our digital counterpart.

# THE JOURNEY OF NOMADAI

## 1988

- Experimental research on animal paleocortex, Neurological Lab Donetsk State Medical Institute study & research pituitary gland dept
- Unlocked insight to natural phenomena of how neurons function
- Insight into the intercommunication between cause and effect neurons.

## 1991

- Observation from past experiments realized in abstract form
- Mathematics used in today's ChatGPT studied, resulting in a more natural solution to AI discovered
- Program written with correct mathematical and physical formulas
- Unpacking observations recorded from 1988

## 2015

- NomadAI R&D revisited under Adobri Solutions Ltd - Google Lunar XPRIZE expedition
- NomadAI positioned as the intelligence of the Lunar Landing Technology, Adobri Solutions Ltd. Google Lunar XPRIZE expedition
- Extensive study of structures observed in natural neurology

## 2022

- Skyleap reaches resolution to counter ChatGPT & Generative AIs
- Development commenced from lessons learned in combining neocortex physiological structures in software
- NomadAI refined to accommodate multiple nonlinear wave in its neuromorphic 2D membrane

## 2023

- Breakthrough, NomadAI gains ability for total memory recollection with similar structures and mechanisms found in neocortex
- Identified next key function for the commercialization of NomadAI, which is the machine learning expansion of the neuromorphic membrane
- Team members repositioned for expansion phase of the company

## 2024

- Neuromorphic software architecture with machine learning expansion design commenced
- API development set in motion to distribute NomadAI products
- First customer acquisitions

# SERGEI DOBRIANSKI

## CEO + DIRECTOR

Sergei attended Simon Fraser University for Computer Science. In 2014 he managed a submission of a Request for Proposal that won Adobri Solutions Ltd a contract with the European Space Agency under the General Studies Lunar Landing Technology, for Earth and space bound navigation using Pulsar signals for position determination. That same year, Sergei began to work full-time on the Google Lunar XPRIZE competition. He designed, manufactured, and tested hardware and software of the company's satellite systems and Lunar Landing Technology. In 2016 Sergei stepped into CEO role of Adobri Solutions Ltd, Team Plan B – Google Lunar XPRIZE during which time he conducted the following:

- On boarding 17 team members
- Brokered office & workspace @ Applied Research, BCIT
- Secured SH&ED & began the process with IRAP
- Recruited notable members to the Board of Advisors
- Drafted US patents of specific technologies
- Regulatory engagement to secure RF spectrum for LEO satellite
- Received diversities cash prize under the Google Lunar XPRIZE
- ISRO Space Agency, Antrix engagement for payload launch to Geostationary orbit and Lower Earth Orbit on the Polar Service Launch Vehicle (PSLV)
- Secured launch for Skylark satellite to Low Earth Orbit via ISISPACE on the PSLV for critical systems quality assurance prior to main Lunar Orbiting/Landing mission

Since then Sergei introduced two new products to two separate industries while continuing NomadAI development. While AI is still in its pioneering phase, Sergei is driven to support businesses in their aim to take early advantage of AI and everything it has to offer.

# ALEX DOBRIANSKI

## CTO – FOUNDER

Alex graduated with a masters degree in Mathematics from Donetsk State University, Ukraine and ranked fourth in a highly competitive mathematical faculty.

Alex conceptualized the neocortex operating as dynamic waves in the late 70s, and selected the correct physical formulas to reanimate the neocortex in abstract form during the same year. In 1988, in the Neurological Lab Donetsk State Medical Institute study and research of pituitary gland, a team of doctors and Alex, using a micro electrode they conducted studies on cats. The concept that neurology operated as a dynamic wave was asserted and Alex rapidly implemented the first neuromorphic 2D membrane in the late 80s early 90s. Please note, this signal firing phenomena was later viewed and verified in 1998-1999 by Charite – Berlin University Medicine.

Since then Alex pioneered multiple technologies.

- 1991, using ultrasound to provide visual profiling during mine shaft drilling, his program verified that the drilling did not deviate from the intended target
- 1992 he wrote one of the world's first Optical Character Recognition system (Russian, English, Arabic)
- In 1994, he wrote the PC Emulator of mainframe computer IBM 360/370. This Emulator was used at the Nuclear Power Station Design Institute (St.Petersburg) and Aero-Space Academy of Russia. Currently the program acts as the operating system for Roscosmos for the Proton and Soyuz launch vehicles
- 1995, Cinax Design Inc, Vancouver, he was first to introduce film and computers
- 1997 – 1999 Adro Labs (US patent 7,089,319), intended for both video streaming & video broadcasting (skype & youtube equivalent), the product was completed in 1999 four years ahead of skype
- 2008 – 2016 Alex was the Team Lead at Adobri Solutions Ltd, Team Plan B – Google Lunar XPRIZE. The engine of progress, he took the most expensive systems in the space industry and designed an inhouse proprietary alternative reducing cost for various systems

# ARKADI TCHOUDNOVSKII

**MATHEMATICIAN AND PROGRAMMER**

Arkadi graduated with a master's degree in mathematics, Donetsk State University, Ukraine 1977 – 1982, ranked 1st in his graduating year, retaining 37 disciplines in mathematics.

While in the university he was extensively studying different aspects of pure and applied mathematics as well as computer science.

Since then, he has worked on multitudinous technologies, varying in their degree of severity. From the forefront of innovative multimedia technology to rigorously convoluted cryptography, Arkadi provides salient insights and expertise when problem-solving the truest unknowns. Fascinated by the power of computational thinking and the limitless possibilities it offers. Arkadi developed and designed programs currently used by thousands if not millions of people.

# ALEX SOROKIN

**ELECTRICAL INSTRUMENTATION & SIGNAL PROCESSING**

In the realm of electrical engineering, where precision and efficiency are paramount, one individual stands out in electrical instrumentation and signal processing. Alex Sorokin attended UBC for electronics and design, and later secured a position at TRIUMF (which houses the largest cyclotron in the world), where he helps design particle detectors for a variety of fundamental physics experiments, including precision decay measurements (NA62 at CERN, and nEXO at SNOLAB), neutrino and antimatter measurements (nEXO, Alpha/ Alpha-g), and search for dark matter (DEAP, DarkLight).

Previously, Alex built particle detectors for CERN, the European Organization for Nuclear Research. Currently is working on VUV supercontinuum generation with ultrafast lasers (via non-linear photon-gas interaction inside photonic-crystal fibers), which will aid in advancing single-photon sensors used in the next generation detectors for experiments that will someday help shed light on dark matter and solve the baryon asymmetry puzzle.

# REVENUE STREAMS

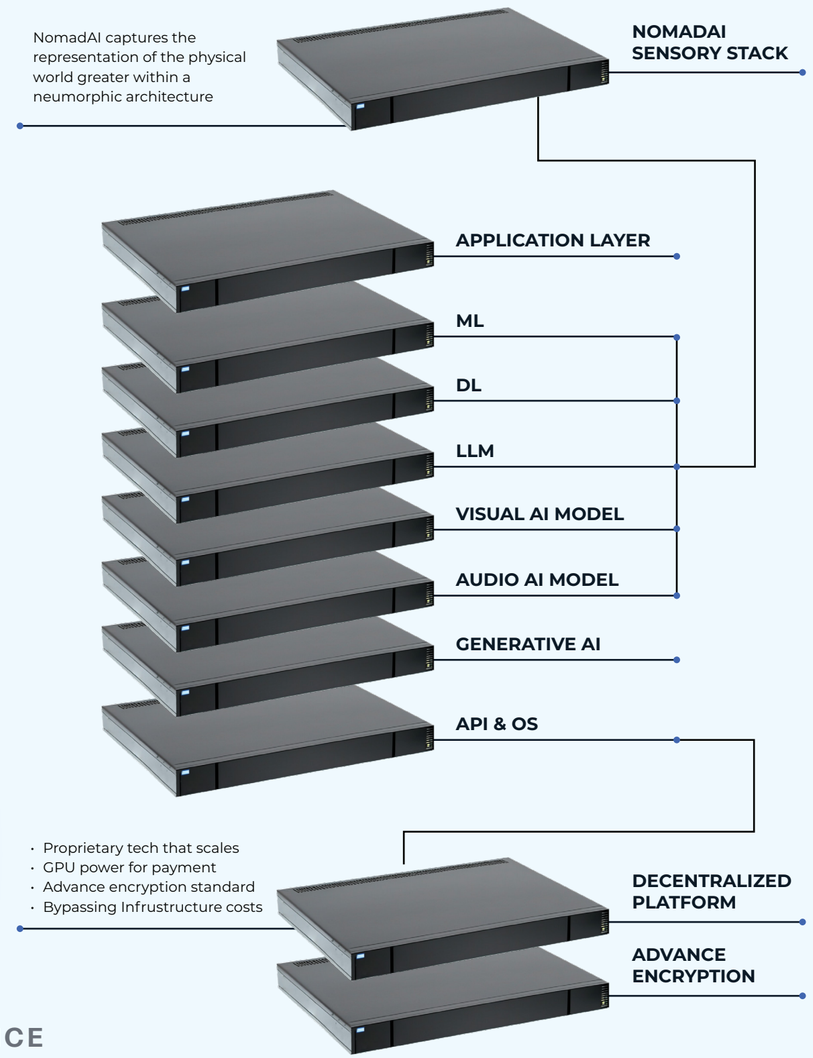
**NomadAI on Demand;** is a Platform as a Service (PaaS) API that gives our customers scalability and flexibility when they need it most. It is a ready to use infrastructure that bridges customer needs with advance neuromorphic technologies through Skyleap's API. The fees are divided into two categories:

- Developer API access, monthly subscription for engineers, corporations, and freelancers who need access to NomadAI
- Enterprise API access, annually recurring fee with a dedicated GPU and customer support

**Managed Service:** for B2B Partners and enterprise customers consisting of Professional Services, annually recurring license and dedicated support. Curving NomadAI around the business so it can realize its value quickly.

## INDUSTRY GENERATIVE AI TECH STACK

**THE NOMAD BREAKTHROUGH (STATE OF ART)**

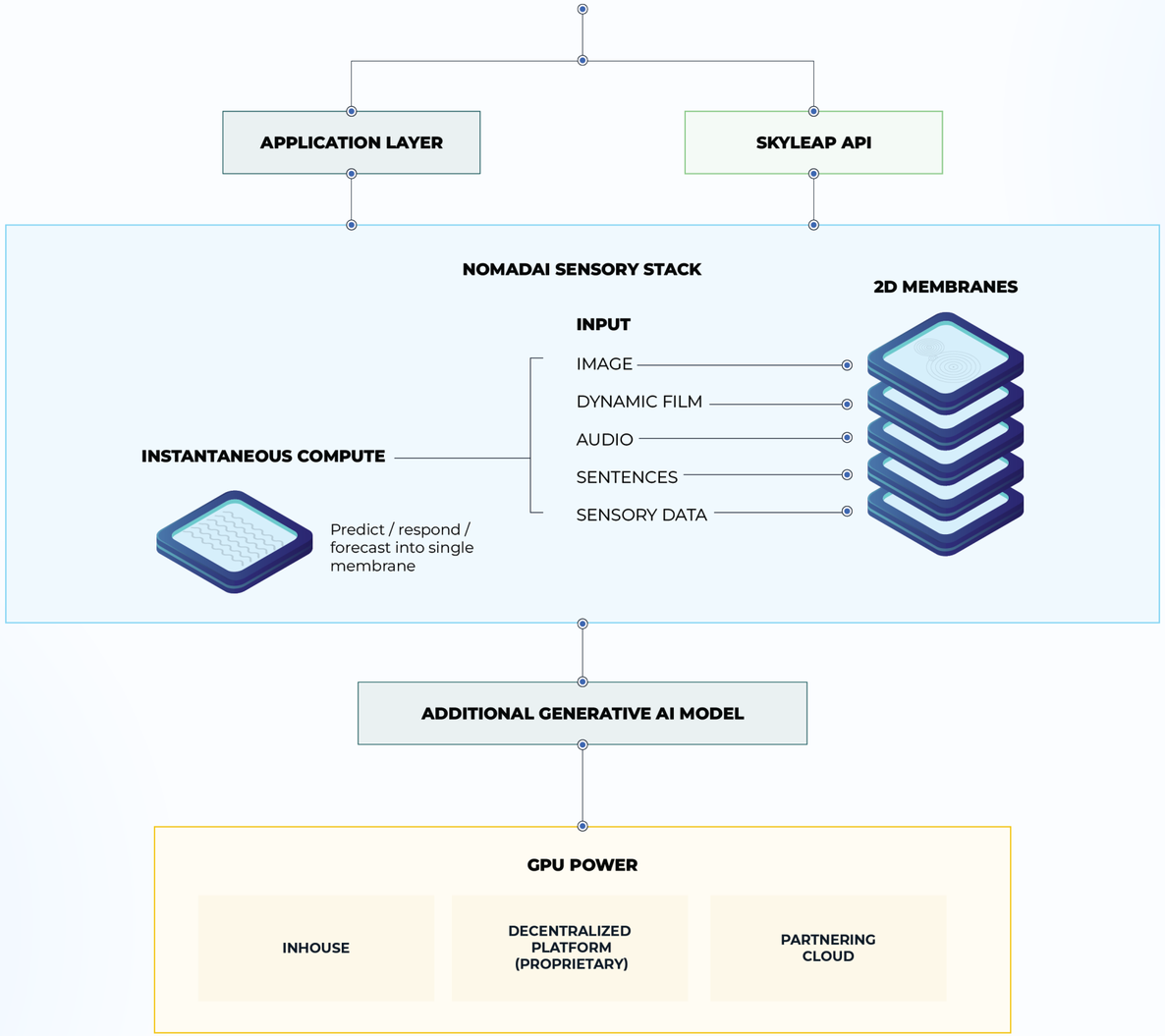



**B2B Partnerships:** encapsulates NomadAI within the partnering systems for the betterment of business. Potential partnerships and the applications:

- Leading chip manufacturers to house NomadAI on their specific hardware
- Generative AI products; NomadAI provides the foundation to Machine Learning and Language Model applications to ameliorate latency and power consumption
- Autonomous driving
  Logistics
- Robotics
- Cyber security
- Healthcare
- Satellite imagery
- Visual & voice recognition
- Surveillance & security

**Customer Support:** the above B2B Partnerships and Professional Services income streams require upkeep, troubleshooting, calibrated refinement, and maintenance. Customer support is a standard practice in IT, a requirement that is identified as one of many business drivers and revenue streams.

# USERS AND PARTNERS




# THANK YOU

Please contact us here:

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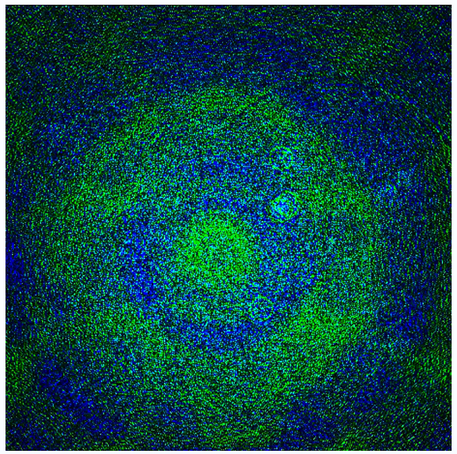
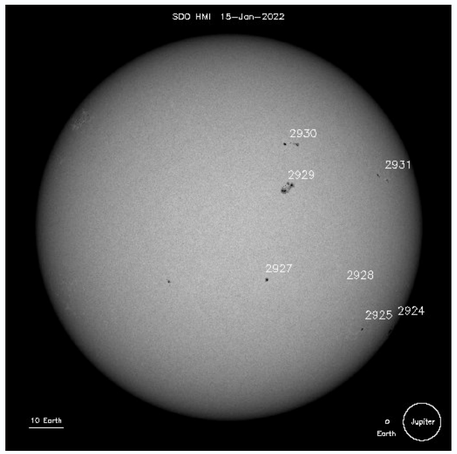
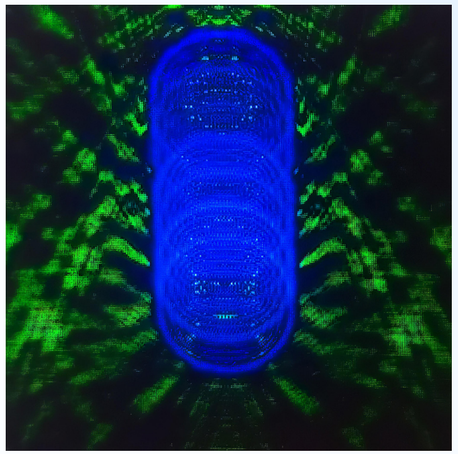
# APPENDIX I



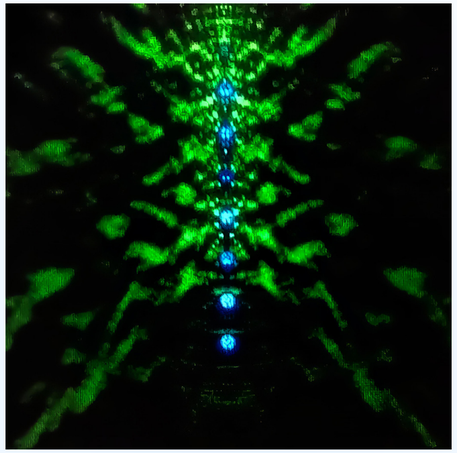
This image shows the introduction of the sensory of sight to NomadAI, its membrane is observing our Sun, what is shown is the visual stimuli a retina would absorb; in this case it is NomadAI's retina.



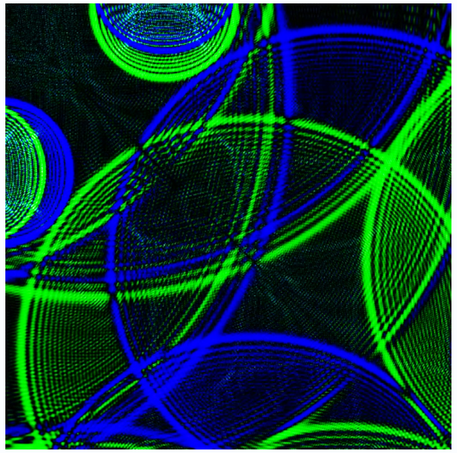

The image before this one, NomadAI's membrane, is observing this image of the Sun and its sunspots.



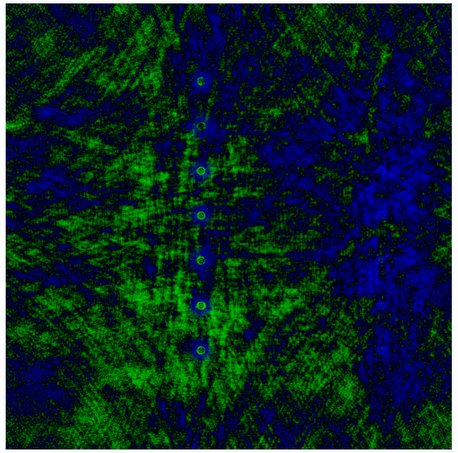
NomadAI membrane in its pre eureka moment during the recognition of a single pattern by the Proof by Contradiction



Convergence in recognition of a pattern. This image shows the neuromorphic membrane affirming a pattern it previously witnessed which existed within its ocean of waves.



Clusterization and groupings of events which subsequently form neurons (analog neural network)



Membrane with encoded data in analog form and the convergence of a specific event it needed to recall from the neurmorphic memory.