PLUG AND PLAY

NOVEMBER 19-21 2024

SILICON VALLEY SUMMIT

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DEEPTECH EXPO

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Stefan Faistenauer

Sr. Ventures Associate

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AGENDA

1:30 – 1:35	Welcome
1:35 – 1:40	Deeptech Partner Welcome
1:40 – 1:45	Deeptech Portfolio Updates
1:45 – 2:15	Keynote Presentation – Bob Friday | Chief AI Officer & CTO Enterprise, Juniper Network
2:15 – 3:00	Startup Presentations

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THE DEEPTECH TEAM



Kevin Withstandly
VP, Partner Success



Janis Skiveris
Principal



Angie Aviles
Director, Program



Kevin Farjallah
Senior Partner Success Manager



Stefan Faistenauer
Senior Ventures Associate



Aved Sodah
Program Associate



Connor Dugan
Partner Success Manager



Leonardo Rocchetti
Senior Ventures Associate

PLUG AND PLAY DEEPTECH



2014 Date Founded

375+ Startups Accelerated

15+ Partners

75+ Investments

Corporate Partners

DOOSAN Bobcat CASIO Claro DAIKIN KYOCERA LG Display MiSUMi NATIONAL SEATING & MOBILITY

NOKIA OKI FUJITSU KÄRCHER ooredoo santec TATSUTA wesco

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New Deeptech

Partner

NOKIA

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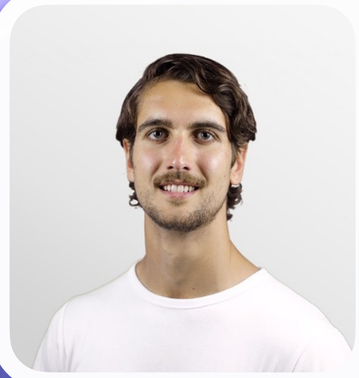

Stefan Faistenauer

Sr. Ventures Associate
Plug and Play



Leonardo Rocchetti

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Portfolio Updates

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Deep Tech Investments in the last year: How it started...

Yama

vaulted deep

ammobia

Terra AI

STARPATH

Lumen Orbit

TOPOLOGIC

mintneuro

GEMESYS

groq

ARSENALE

FACILIS.AI

DIRAC

ARCHETYPE AI

Olivaw ROBOTICS

Stealth Robotics Startup

... how it is going.

ARCHETYPE AI

WIRED SECURITY POLITICS GEAR THE BIG STORY BUSINESS SCIENCE CULTURE IDEAS MERCH SIGN IN

STEVEN LEVY BUSINESS APR 5, 2024 8:00 AM

This AI Startup Wants You to Talk to Houses, Cars, and Factories

Archetype builds AI models that act as a translation layer between humans and complex sensors, using plain language to help people understand what's happening in a building, car, or human body

groq

Reuters World US Election Business Markets Sustainability Legal Breakingviews Technology

AI chip startup Groq valued at $2.8 bln after latest funding round

By **Reuters**

August 5, 2024 4:09 AM PDT · Updated 3 months ago



... how it is going.



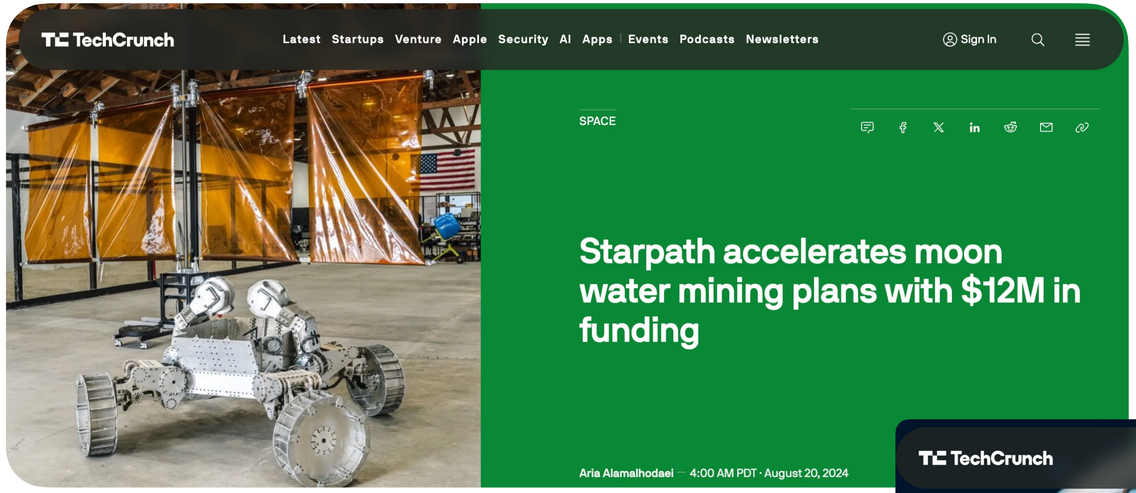
BIOMASS REMOVAL

Frontier Signs $58.3M Carbon Removal Deal With Vaulted

by **Violet George** · May 2, 2024 · 2 minute read

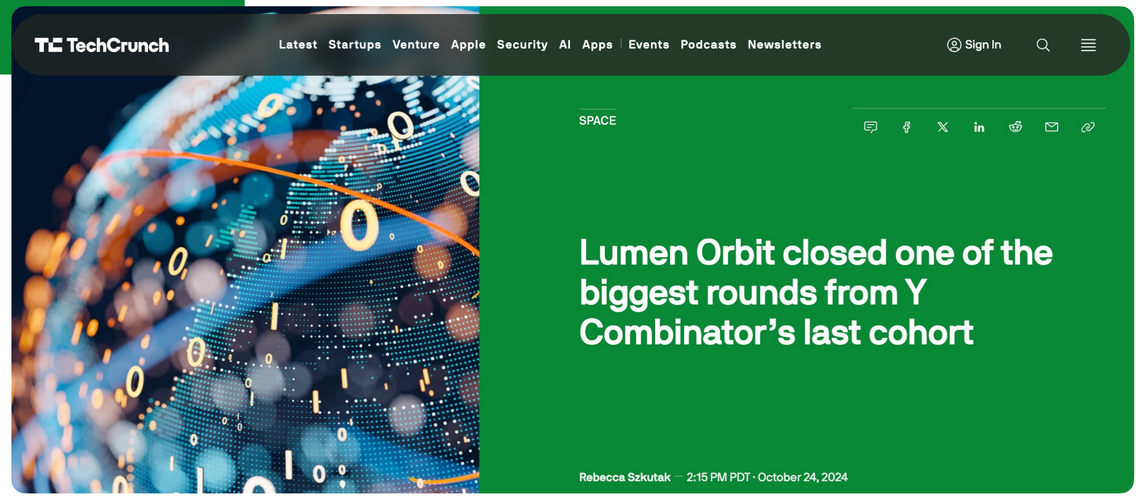
Marking First Full Year of Operations, Vaulted Deep Secures $32.3 Million Series A Funding Led by Prelude Ventures

... how it is going.



STARPATH

Lumen Orbit



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Keynote

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KEYNOTE SPEAKER

Bob Friday

Chief AI Officer & CTO Enterprise

Juniper Networks

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The adoption of AI in enterprises

The ultimate team sport

Bob Friday
Chief AI Officer

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Skeptic

Marketing Hype

Believer but …

[78 Artificial Intelligence Statistics and Trends for 2024]

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Enterprises are adopting AI

AI-powered Healthcare

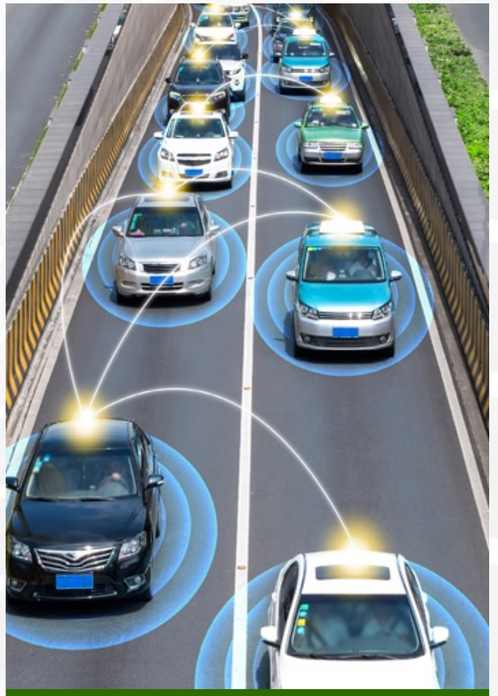




Higher Ed

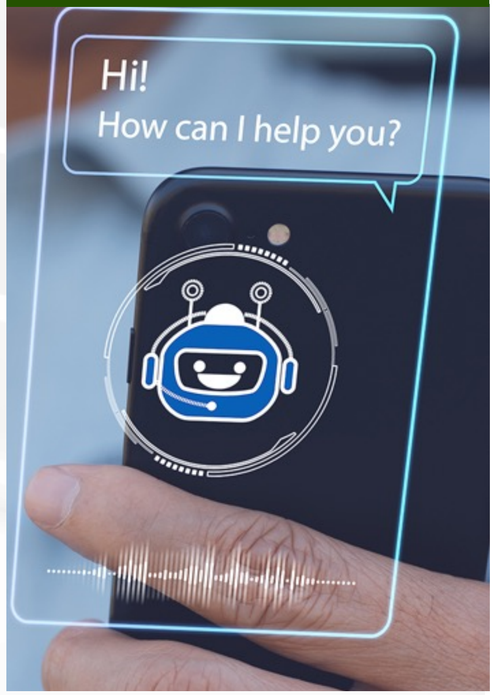
Retail





Autonomous Vehicles

Networking



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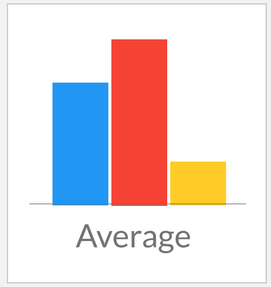
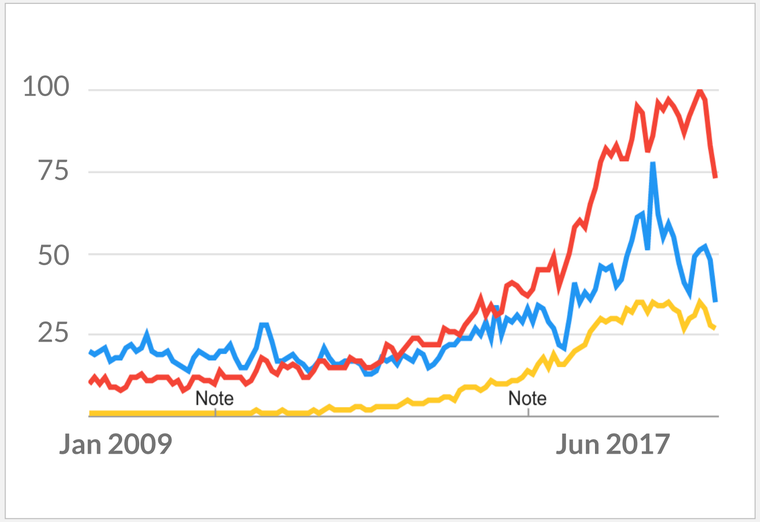
When did all this AI stuff go from hype to being real?

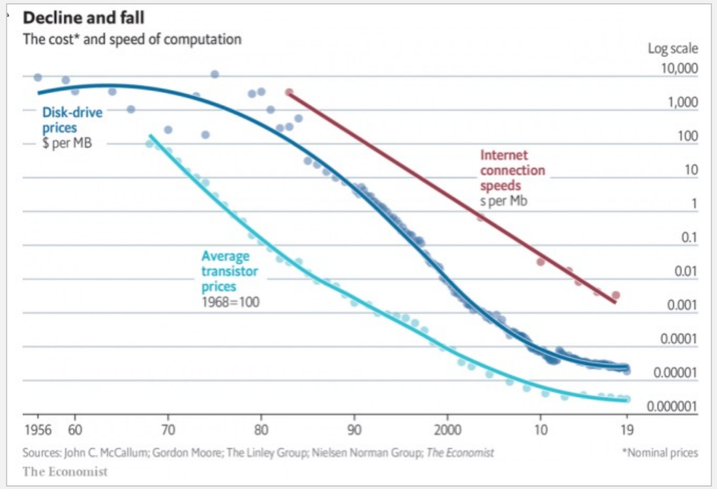


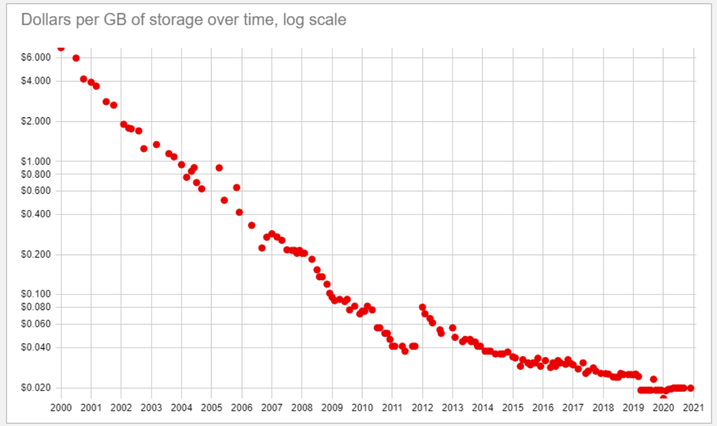
Google Trends



- Artificial Intelligence
- Machine Learning
- Deep Learning

Cheap compute and Storage





Ref:
https://whatsthebigdata.com/2019/09/15/the-cost-and-speed-of-computing-and-communications-1956-201
https://www.petercai.com/storage-prices-have-sort-of-stopped-dropping/

Open Source AI/ML Tools

2002	AWS Cloud
2014	Region-based CNN
2015	TensorFlow

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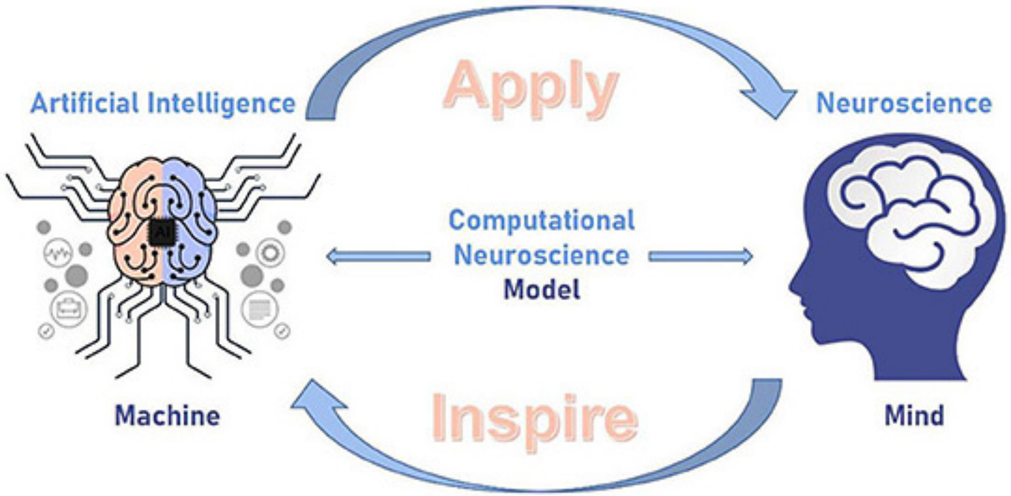
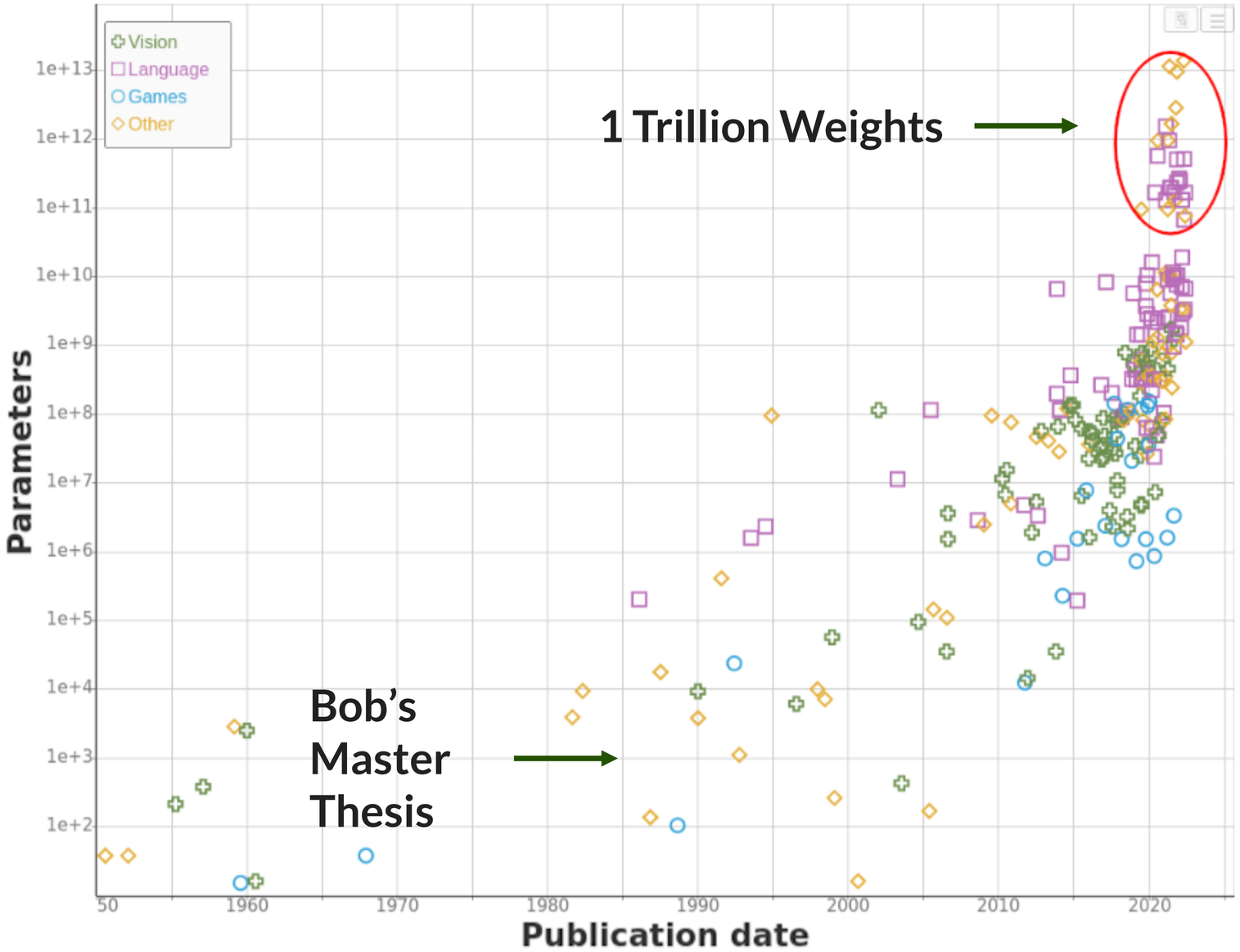
Deep Neural Networks are Getting Larger



~100 Billion Neurons





Ref: https://arxiv.org/pdf/2207.02852.pdf

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AI is the next ~~step~~ leap in the ...



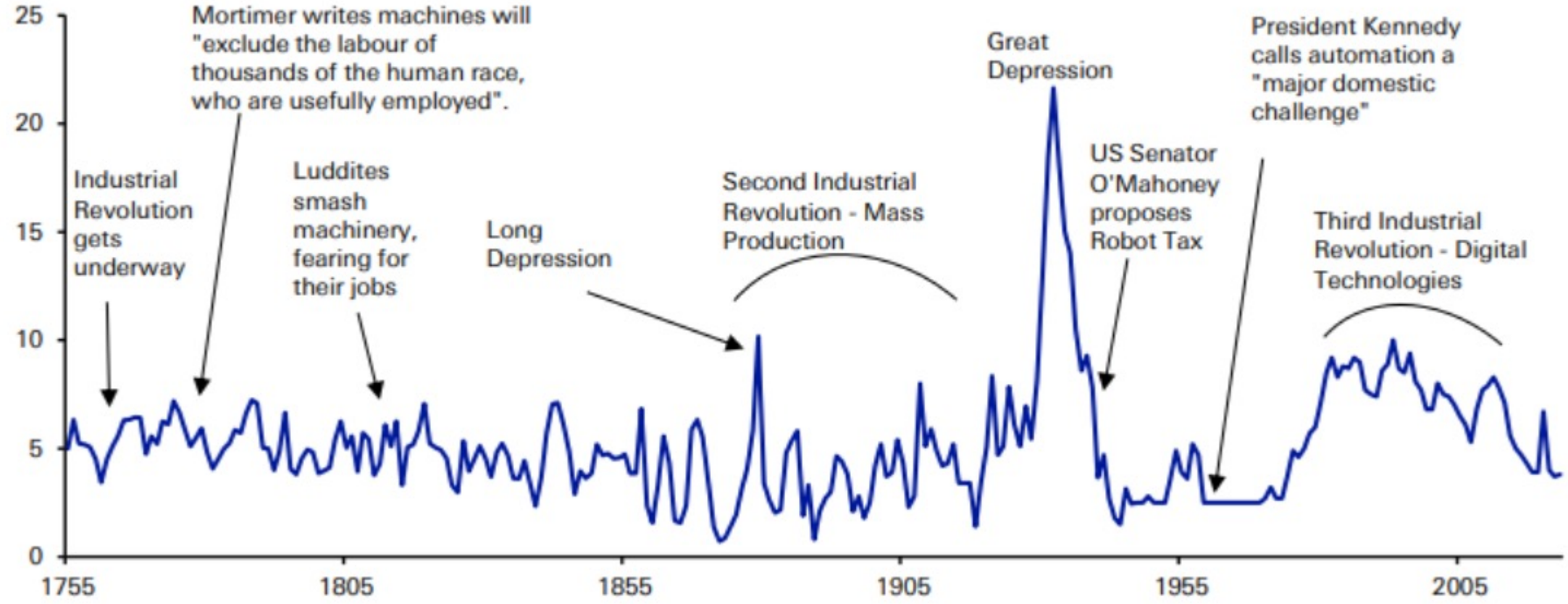
evolution of Automation

Job Destruction vs. Job Creation



Source

Figure 1: Median G7 Unemployment (%) with annotations around technological breakthroughs, fear stories about its impact, and the actual economic-led reasons for job losses



Source: GFD, Deutsche Bank.
Note: The index adds the G7 countries as unemployment data becomes available. Until 1890 it only includes the UK, but by 1895 we have 5 of the G7 countries, and all of them by 1947

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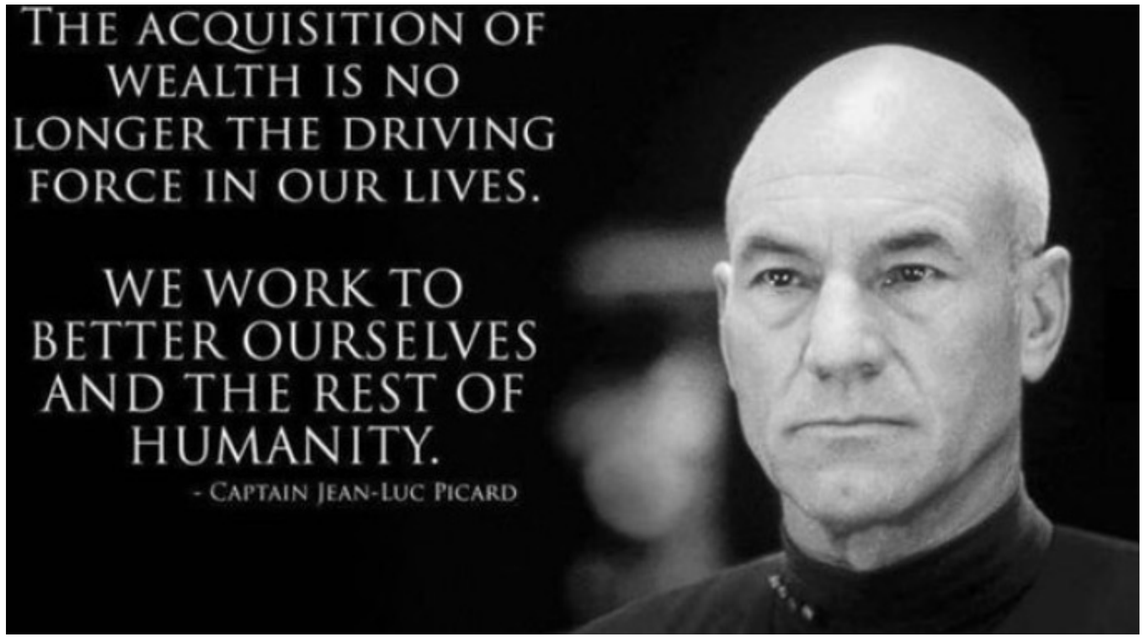
Job Destruction vs. Job Creation

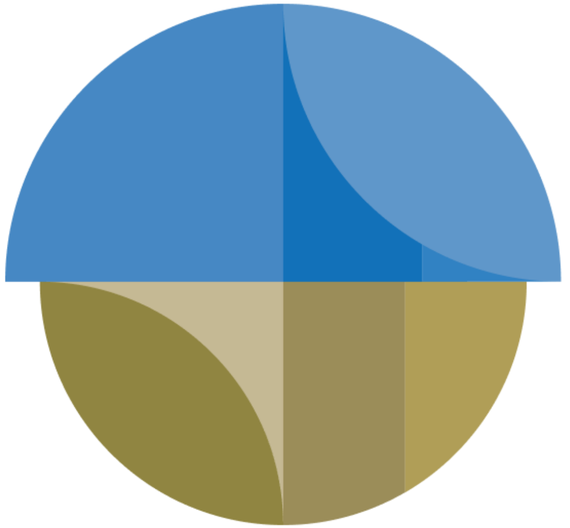
Source



Job landscape

By 2025, new jobs will emerge and others will be displaced by a shift in the division of labour between humans and machines, affecting:

97 million



85 million

Growing job demand:

1. Data Analysts and Scientists
2. AI and Machine Learning Specialists
3. Big Data Specialists
4. Digital Marketing and Strategy Specialists
5. Process Automation Specialists
6. Business Development Professionals
7. Digital Transformation Specialists
8. Information Security Analysts
9. Software and Applications Developers
10. Internet of Things Specialists

Decreasing job demand:

1. Data Entry Clerks
2. Administrative and Executive Secretaries
3. Accounting, Bookkeeping and Payroll Clerks
4. Accountants and Auditors
5. Assembly and Factory Workers
6. Business Services and Administration Managers
7. Client Information and Customer Service Workers
8. General and Operations Managers
9. Mechanics and Machinery Repairers
10. Material-Recording and Stock-Keeping Clerks

Source: Future of Jobs Report 2020, World Economic Forum.

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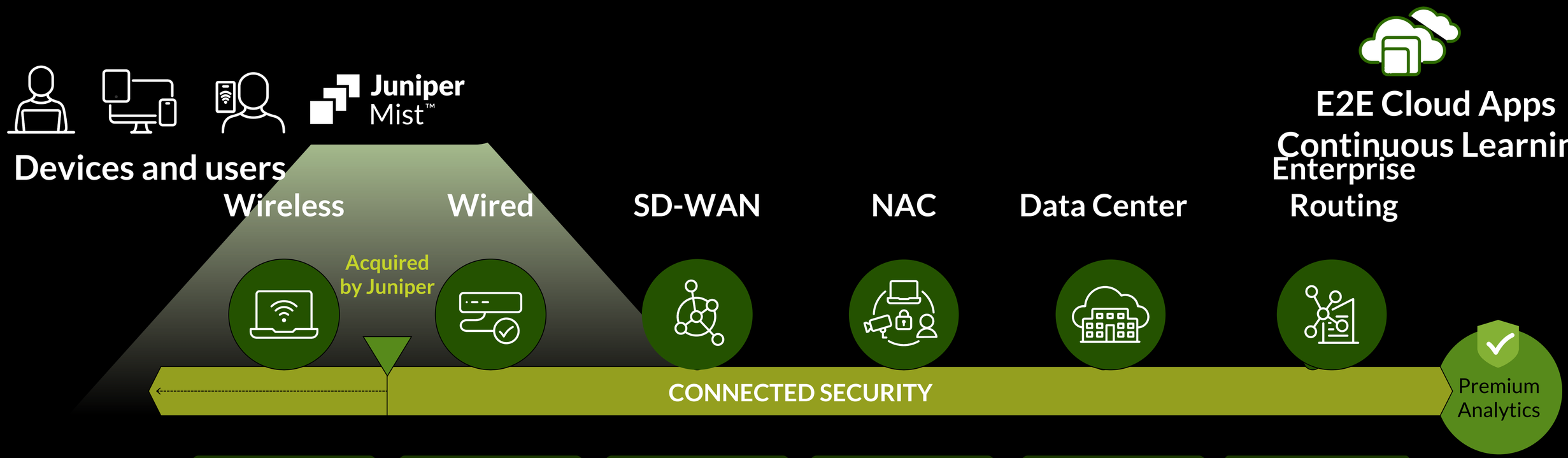
Paradigm Shift from Managing Network Elements to E2E User Experience



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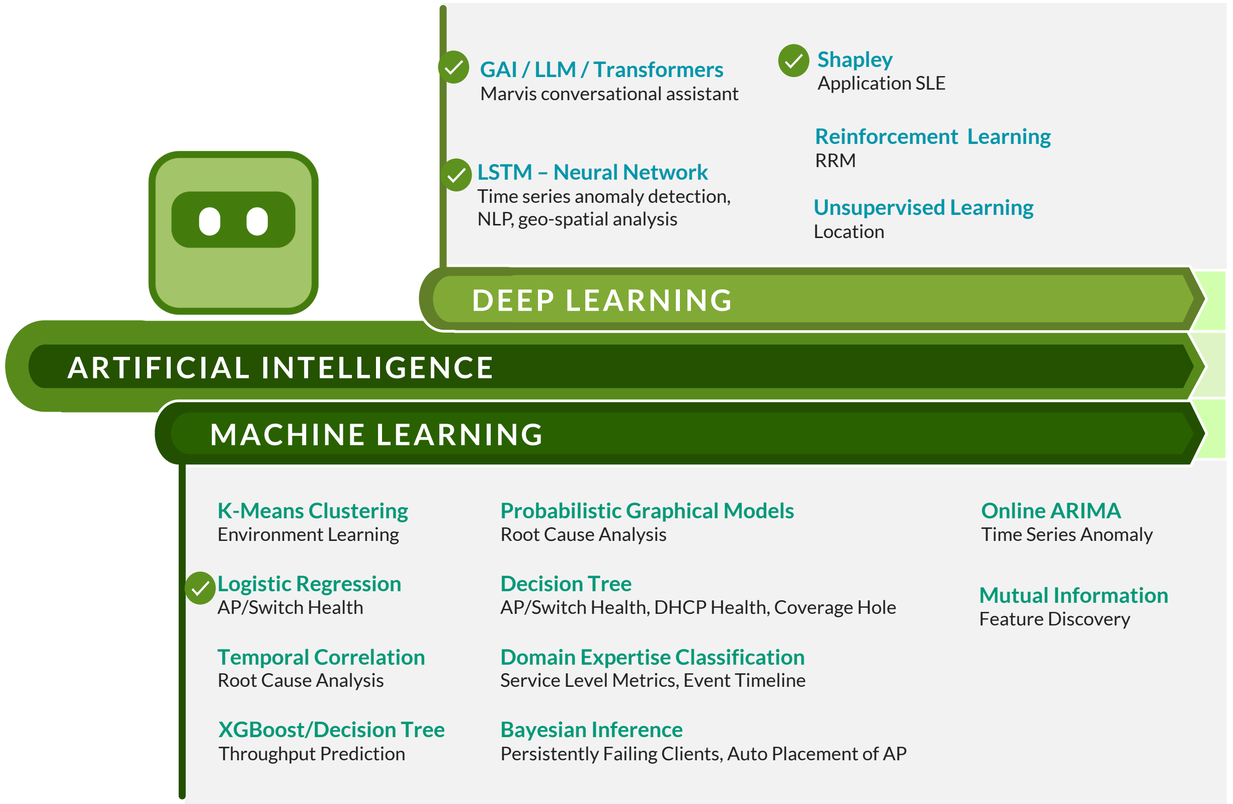
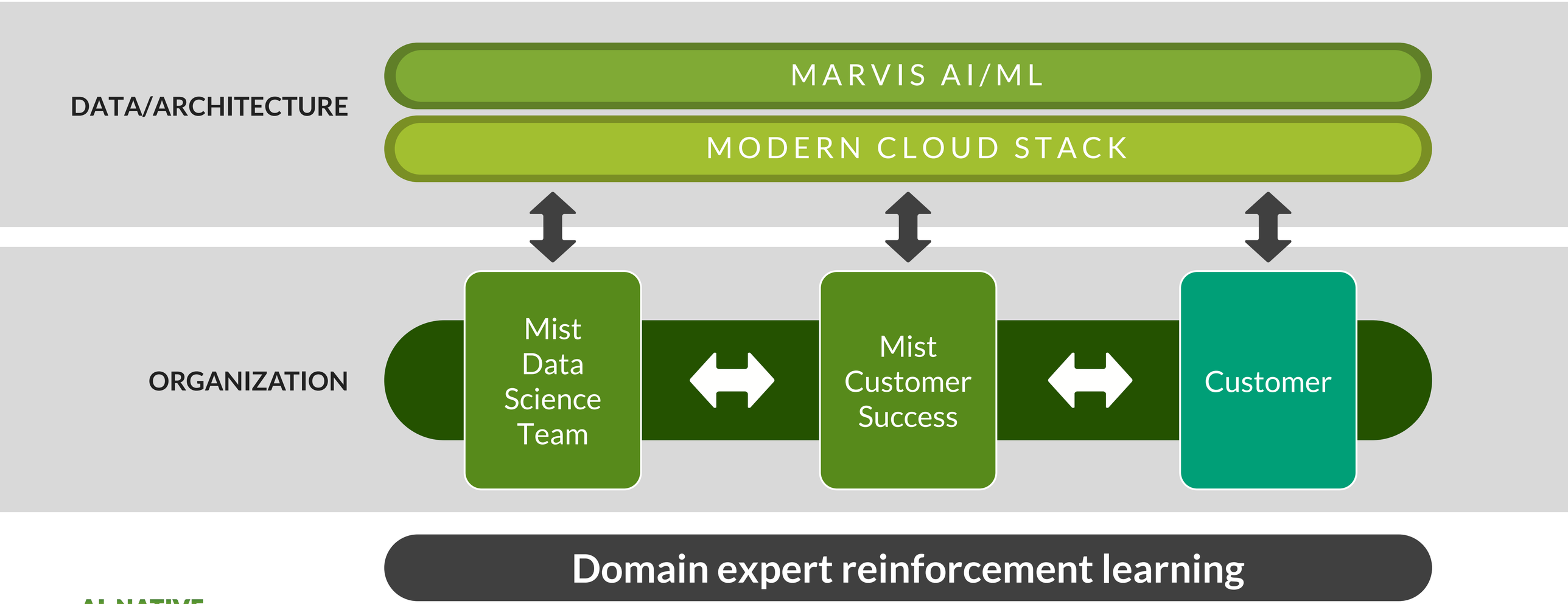
Marketing Hype vs. Real AI Differentiation





AI requires the right organizational structure



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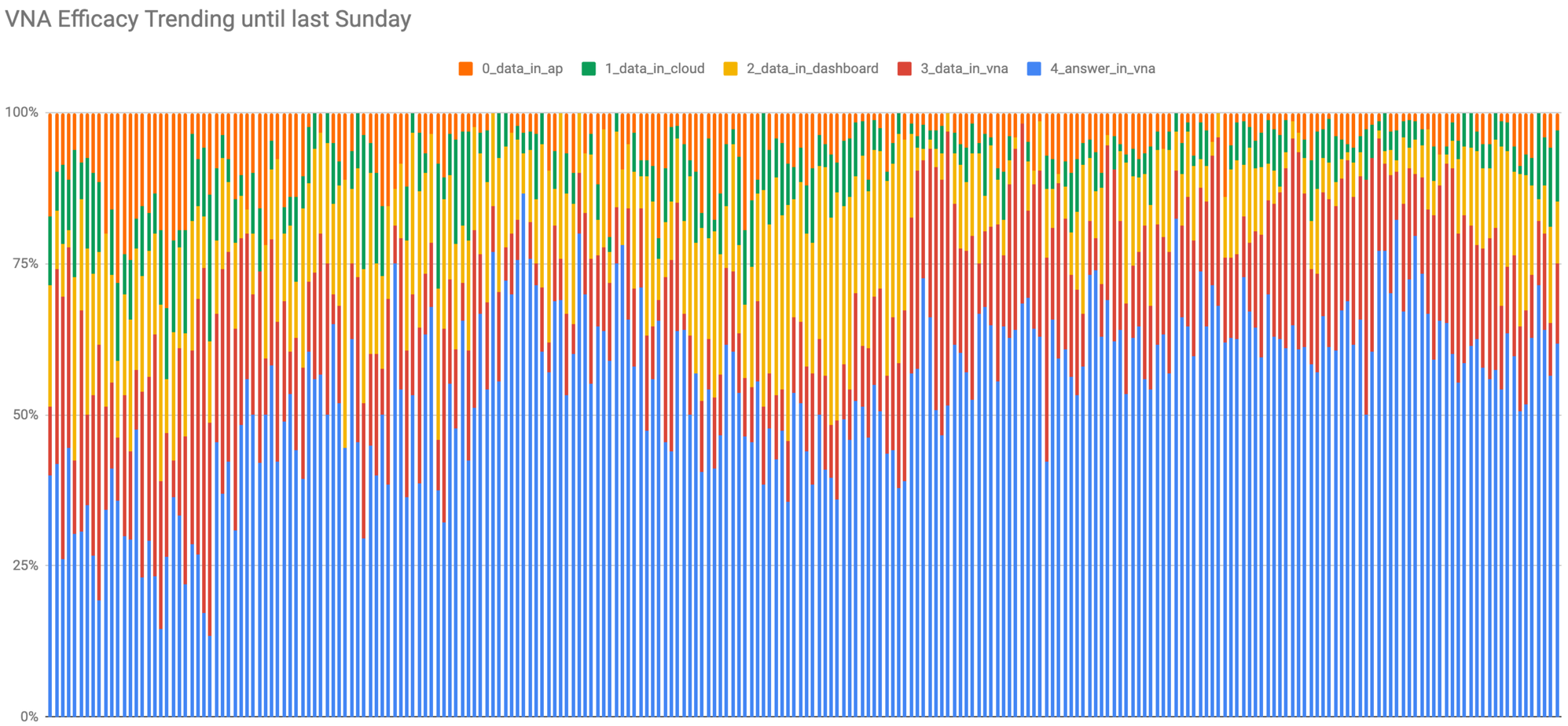
AIOps' impact on customer support



May 2018

Jan 2024

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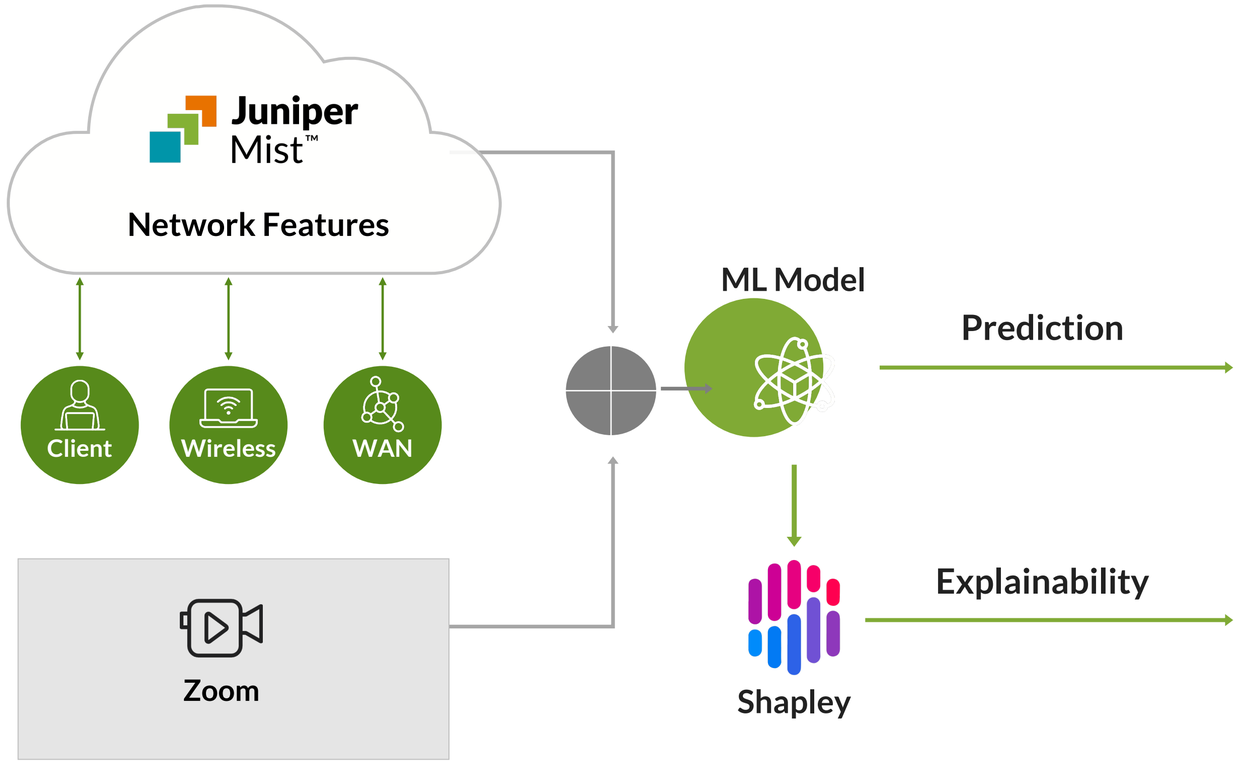
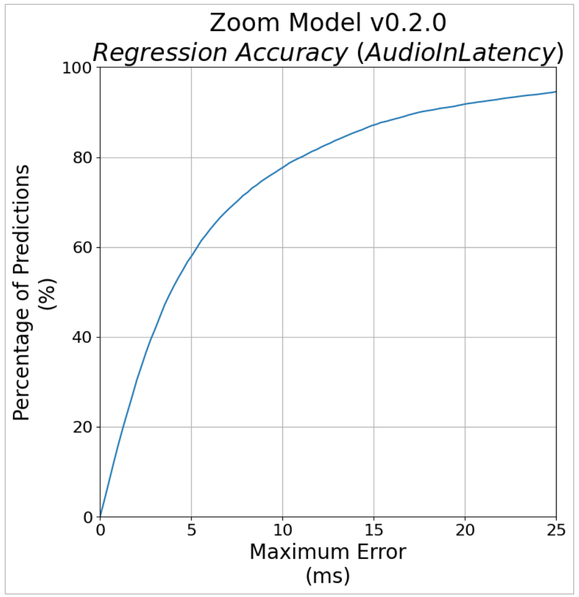
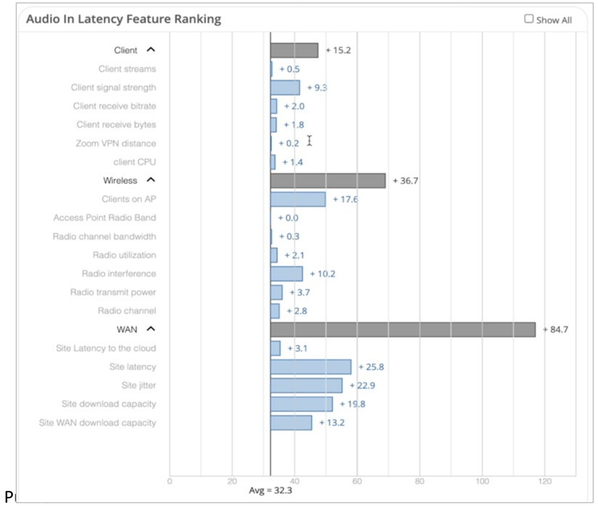
Large Experience Model





Accurate predictions of Zoom Audio Latency.



Explanation of dominant features.

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Kevin O’Leary Effective Leadership

Entrepreneur able to articulate opportunity in 90 seconds or less

Successful in convincing investors that they led the right team to execute the business plan

Knew their numbers and had a comprehensive understanding of their business model

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Thank You

www.linkedin.com/in/bobfriday

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Startup Presentations

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What we will hear about today..

Future of Communication Infrastructure

Current trends in data networks and infrastructure are driven by the increasing demand for speed, efficiency, and scalability in data processing and transmission.

Technologies on the radar:

Photonic Interconnects
Software-Defined Networking
Edge AI

AVICENA

TALLGEESE AI

Materials & Climate Intelligence

Businesses must adapt to increasingly unpredictable environmental conditions. Innovation in material science is key to driving efficiency and reducing environmental impact.

Technologies on the radar:

Climate Risk Management Software
Sensory Intelligence
Material R&D

APOHA

earthena

Industrial Intelligence and Automation

The manufacturing industry is undergoing rapid innovation, accelerated by advancements in AI, machine learning, robotics, and, industrial intelligence and automation solutions.

Technologies on the radar:

Hardware Design
Robotics & Automation

Mechanical AI

MorphoAI

HANOMI.

vorausrobotik

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STARTUP PRESENTATION

TALLGEESE AI

Tallgeese AI

Tallgeese AI, the ultimate privacy-first edge AI workstation.

TALLGEESE AI



Build the Safe and Reliable AI for the Future

(A Plug-and-Play Startup - Batch 21)

PLUG AND PLAY

Recap

- **Raising Seed Round**
  - **Lead:** Cadenza; **Follow:** Pegatron CVC
- **Arm Tech Symposia**
  - Exhibited on 10/29 (Taipei)
- **Intel Partnership**
  - Signed MOU, co-launch Tallgeese on Intel
- **CES 2025 Launch**
  - Live demo at Intel’s booth



Tallgeese AI

Privacy-first,
on-premise AI solution automating
enterprise knowledge management

Customer Pain Points



A typical manufacturing company (~2 million ISO 9001 qualified companies)



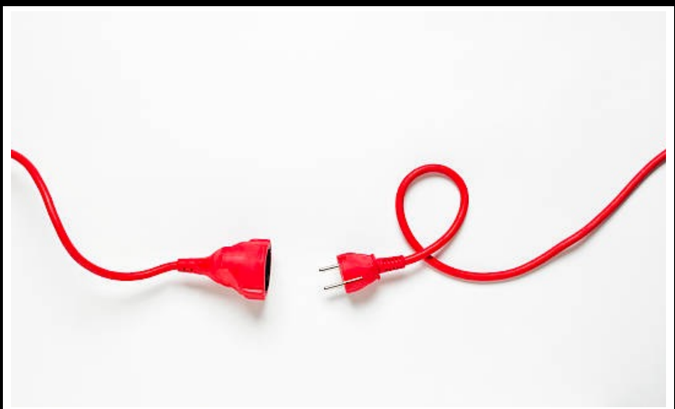
Its Field Application Engineer (FAE) supporting presale

Customer Pain Points



Operational Inefficiency

Information lookups are manual and time-consuming in manufacturing presale and researches



Internal Knowledge Loss

Internal knowledge loss due to a poorly maintained knowledge base and over-reliance on human knowledge transfer



Data Privacy Concern

Risk of data leakage when sending user data and queries to 3rd party AI Chatbots

*Cloud-based AI, like ChatGPT is **NOT** a viable option for businesses with data privacy compliance requirements*

Enterprises' Worst Nightmare

💀 *Data Leak* 💀

Bloomberg

Live TV Markets Economics Industries Tech Politics Businessweek Opinion More

Technology
AI

Samsung Bans Staff's AI Use After Spotting ChatGPT Data Leak

- Employees accidentally leaked sensitive data via ChatGPT
- Company preparing own internal artificial intelligence tools

Gift this article

By Mark Gurman
May 1, 2023 at 5:48 PM PDT
Updated on May 1, 2023 at 10:54 PM PDT

Forbes

FORBES > BUSINESS

BREAKING

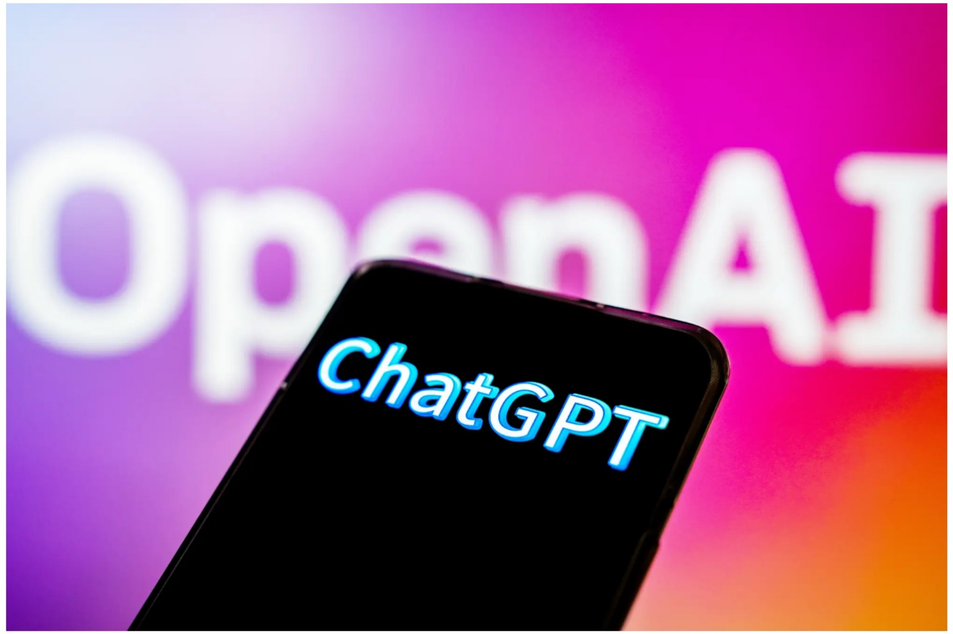
Samsung Bans ChatGPT Among Employees After Sensitive Code Leak



BUSINESS INSIDER

Amazon, Apple, and 12 other major companies that have restricted employees from using ChatGPT

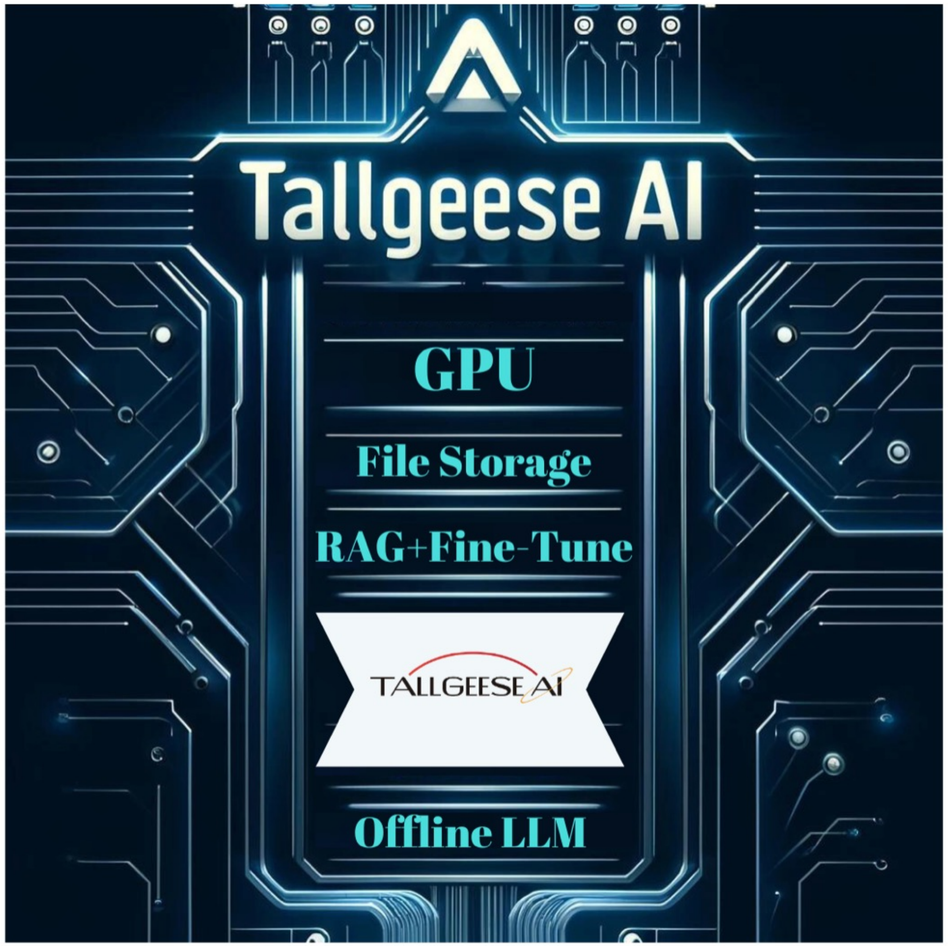
Aaron Mok Jul 11, 2023, 8:38 AM PDT Share Save



Some companies have issued bans or restrictions around using the buzzy AI chatbot ChatGPT. Getty Images

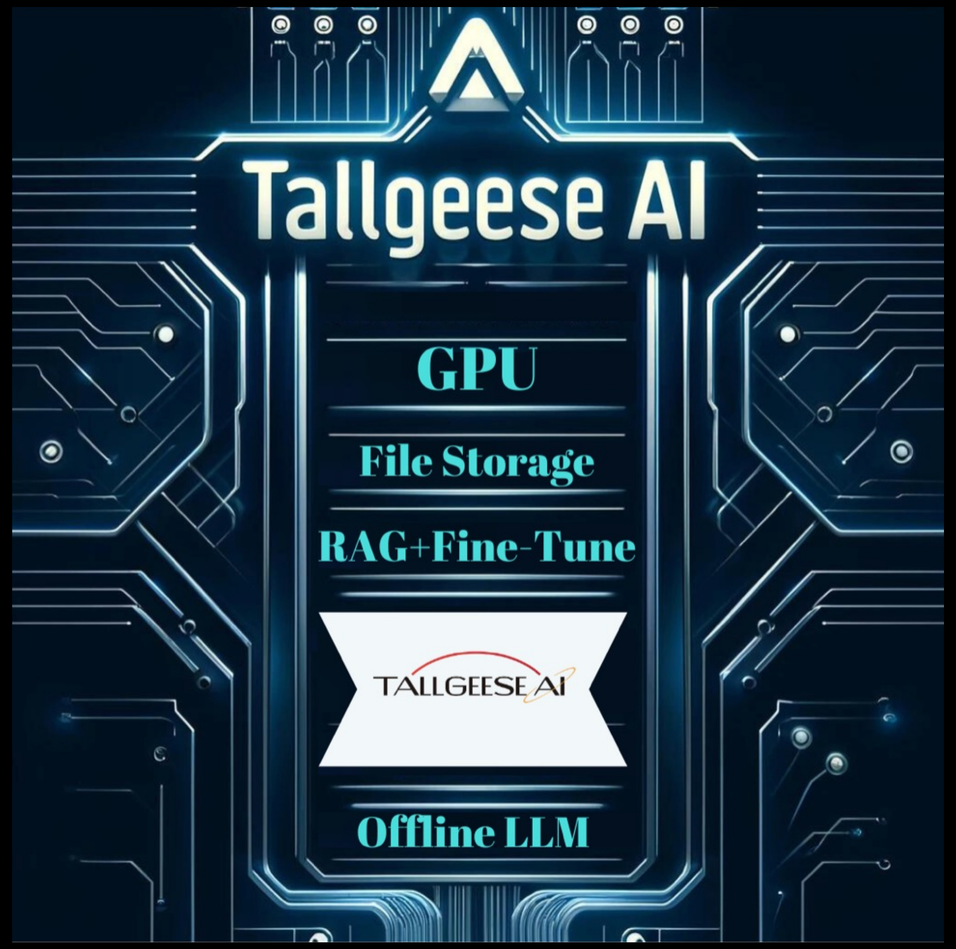
- **Some major corporations are limiting their employees' access to OpenAI's ChatGPT.**

Solution:
All-in-one privacy-first AI workstation for workflow automation

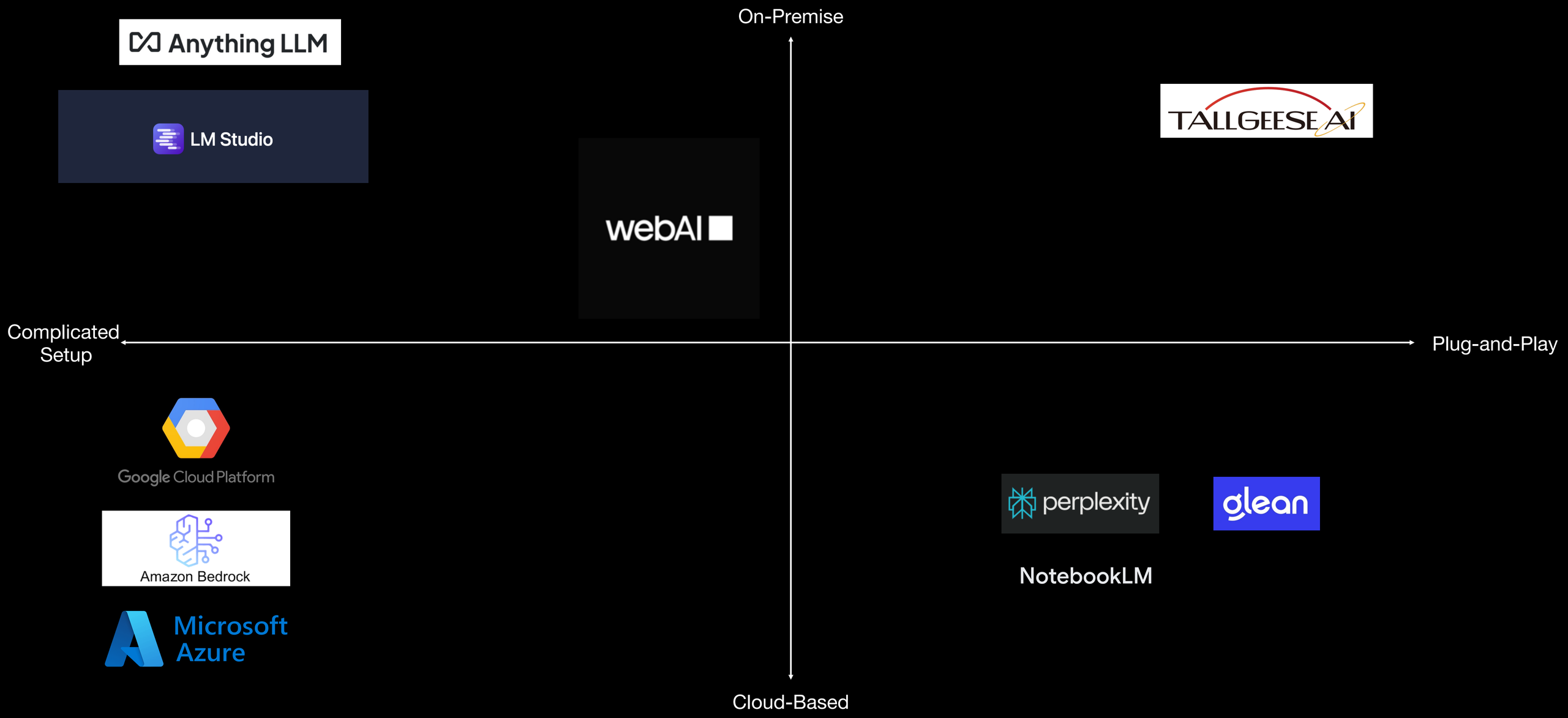


Our Solution

- Plug-and-Play Total AI Solution
- Privacy-First Architecture
- Enhanced Accuracy
- Flexible Deployment
- AI Apps Plug-in Integration



Competition



Business Model

Listing subscription fee: $30,000 USD /workstation/year

Include usage license, technical support, hardware and software upgrades



Total Addressable Market

Global AI server market size at 2033 (Forecast)

Serviceable Available Market

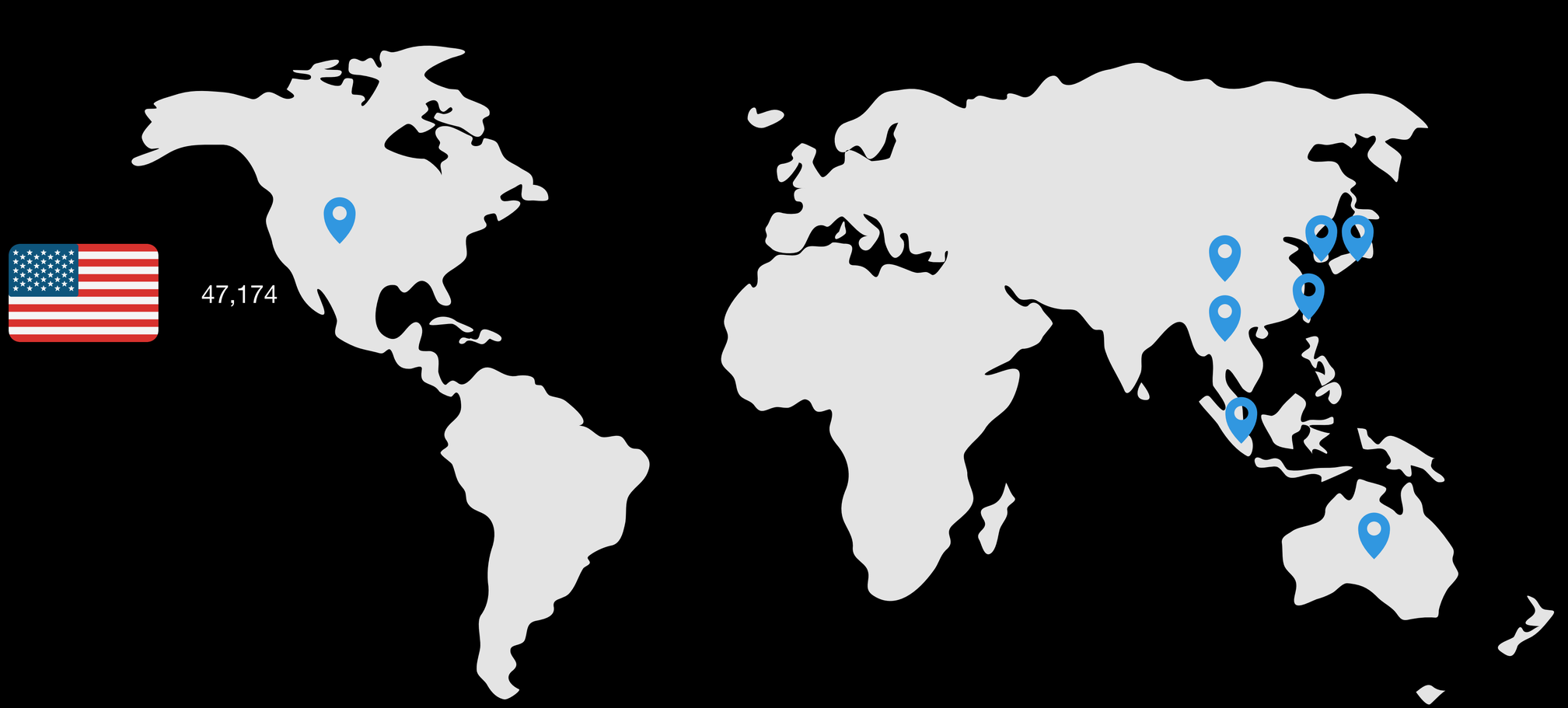
Serving **720K** SMEs manufacturers, **~4000** Tertiary Institutions in Taiwan, Japan, HK, USA

Serviceable Obtainable Market

Serving **10K** SMEs manufacturers, **400** Tertiary Institutions in Taiwan, Japan, HK, USA

Source: statista, census.gov, sme.gov.tw, USA schools, TW schools, HK schools

Target Markets



47,174

556,284

87,778

30,874

29,426

17,583

16,182

15,352

# of ISO 9001 qualified companies

Financials & Profitability

$5M
(Angel Round)

Valuation (USD)

TW, HK,
JP, USA

Business Region

9 confirmed

8 negotiating

SI & Partners

$150K+

Sales (USD)

$200K+
(2024 Q4)

Potential Sales

10+

Corporate clients

*SI = System Integrators

Fundraising Roadmap

Funding Round	Target Funding Ask (USD)	Timeline	Status
Angel	$500K	Q2 2024	Complete
Seed	$5M	Q4 2024	In-progress

Team

Jeffrey Lai
(CEO & CTO)



Apple (Head of Siri on-device AIML asset engineering,
Chinese Siri founding engineer)
NASA (Intelligent Robotics Group)

Johnson Shum
(COO)



Aiilog (founder), Graduate of
Hong Kong Science Park Incubation,
Linked3, Feetag (founder),
Sanofi, AstraZeneca

Lman Chu
(CSO)



BiiLabs, IOTA Foundation,
Seasoned Entrepreneur,
IPC Industry Expert

Carnegie Mellon University
B.S. Electrical & Computer Engineering

The Chinese University of Hong Kong
B.S. Chemistry

National Cheng Kung University
B.S. Chemistry

NCKU EMBA 95

Hong Kong Science Park
Startups Alumni Association
Member

Builders From:



Uber

















Hong Kong Science Park

Backed By:







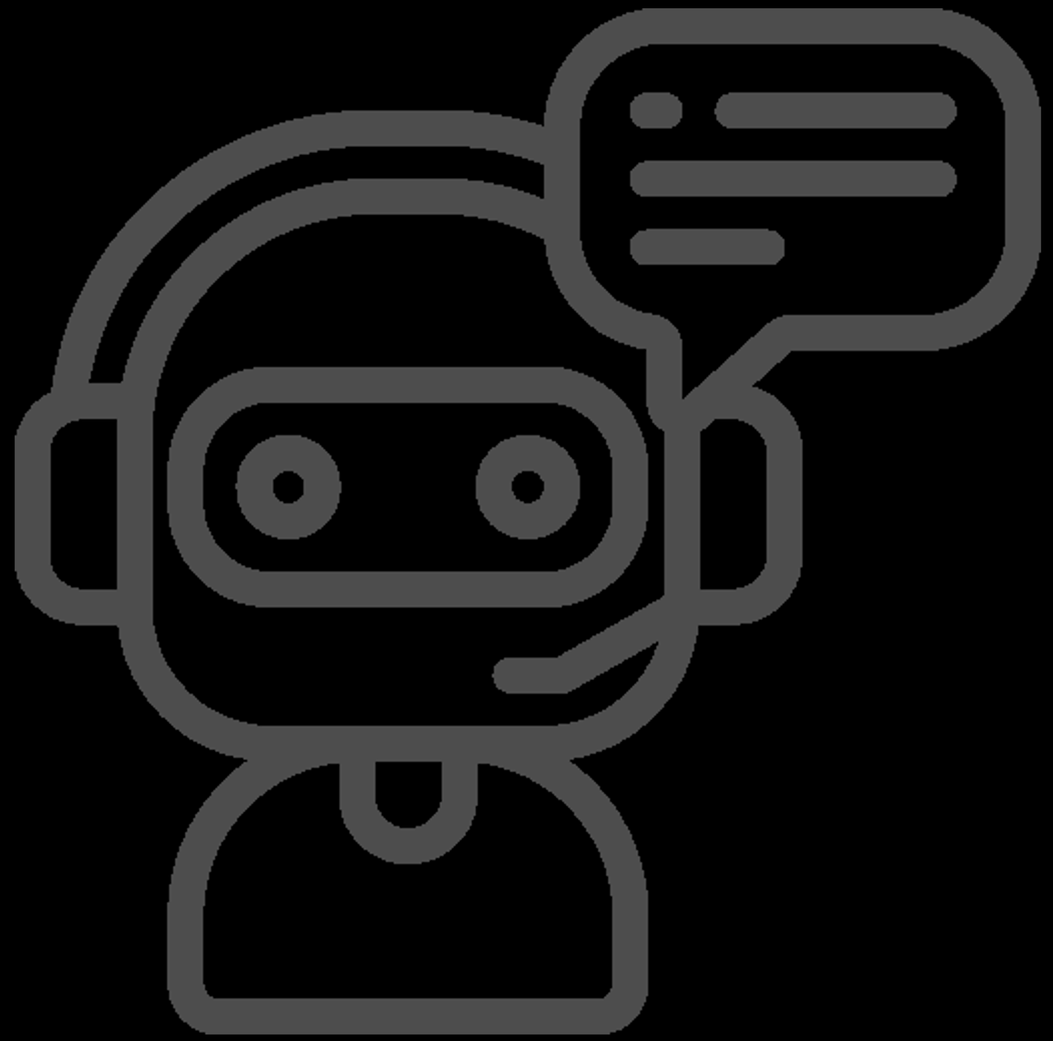




Questions?

https://tallgeese.ai

Email: jeffrey@tallgeese.ai



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STARTUP PRESENTATION

Mechanical AI, Inc.

Mechanical AI, Inc.

Mechanical AI automates iterations in mechanical design processes.

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Toward Hyper-Scalable Mechanical Designs

– Mechanical Design Automation Using AI –

Jinwook Lee, Ph.D.

Founder & CEO

Mechanical AI, Inc.

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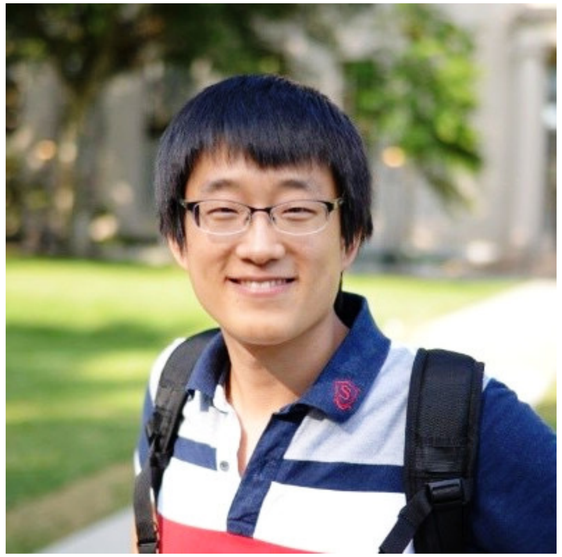
Founder *Journey Started from Real-World Engineering Problem*



CEO Jinwook Lee
MIT Ph.D. AeroAstro / SpaceX

MIT AEROASTRO

SPACEX

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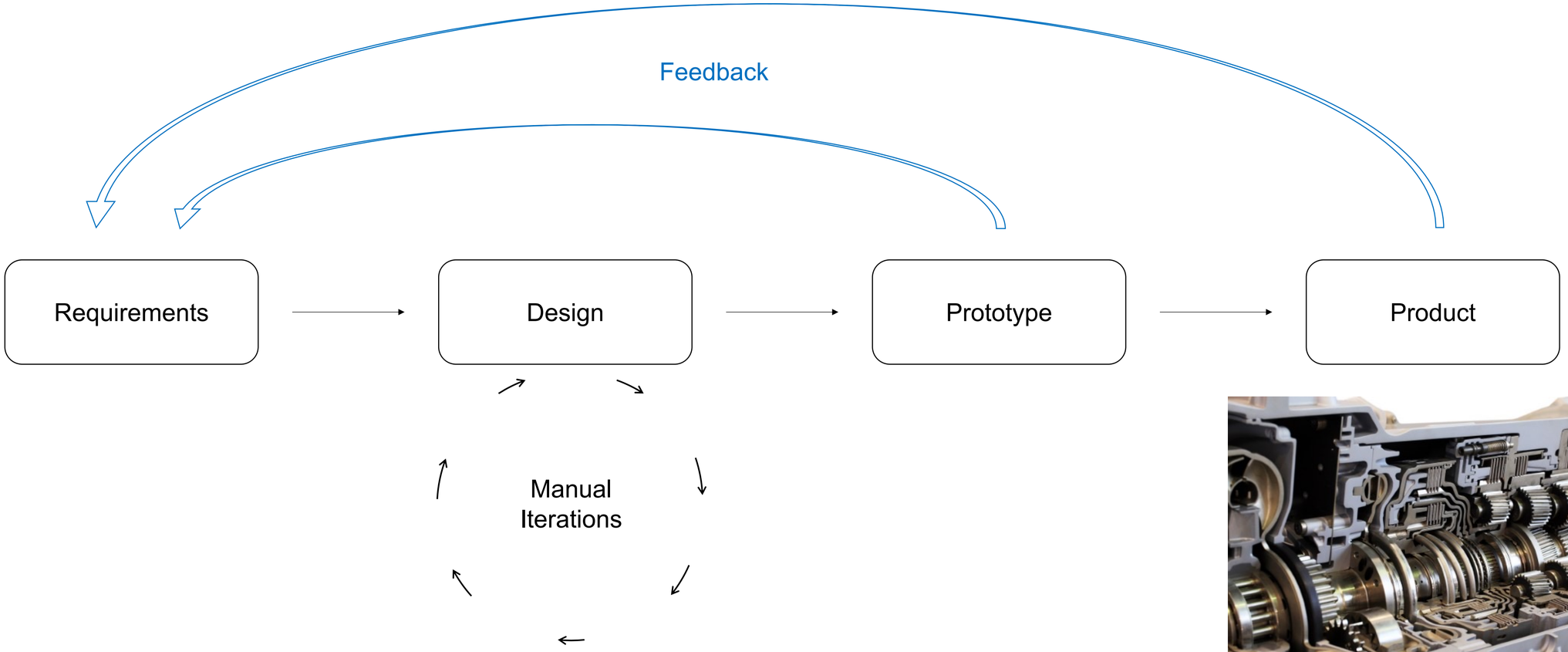
Problem *Iterative and Manual Design Process Limiting Product Complexity*



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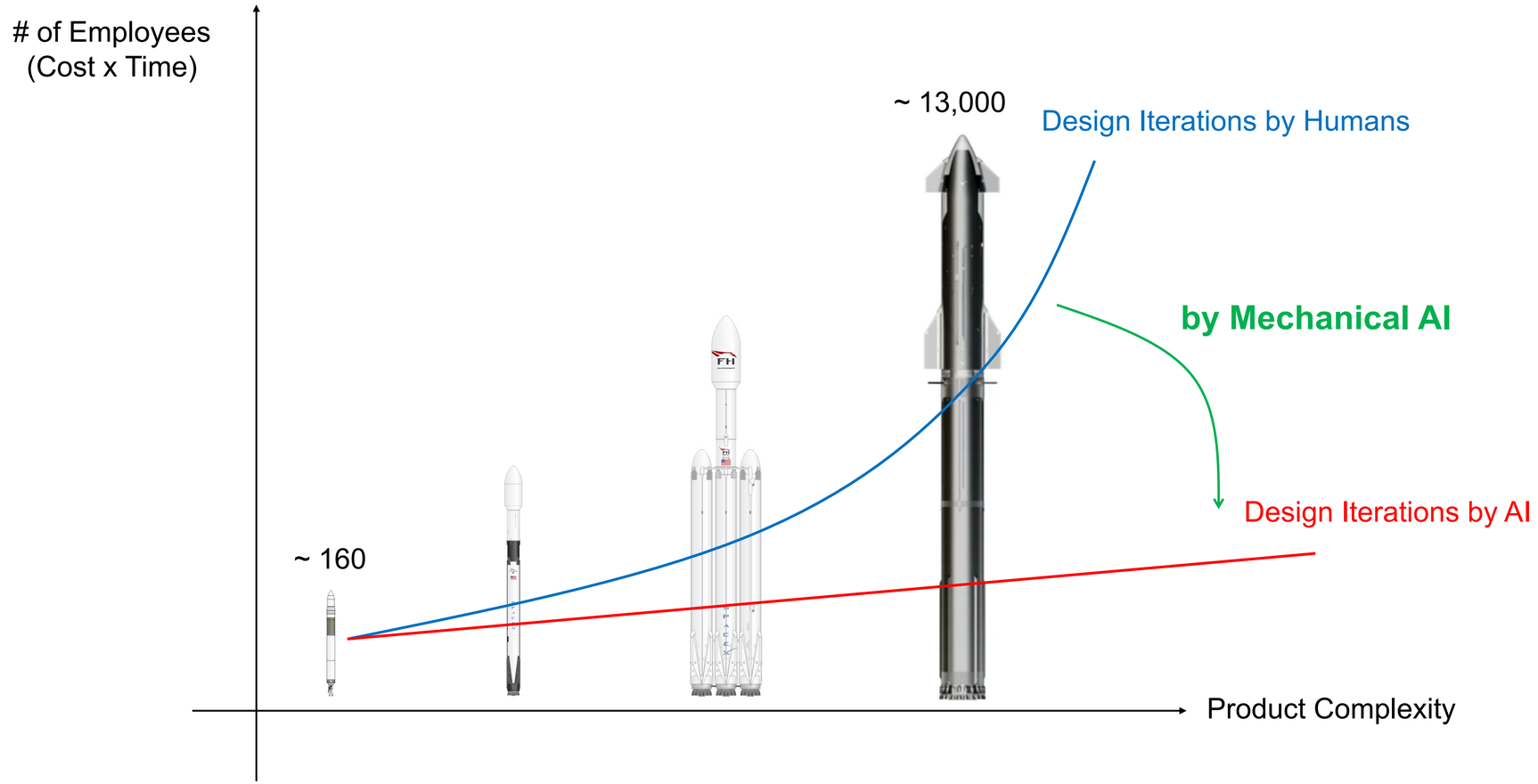
Solution *Unlocked Product Complexity with Design Iterations by AI*



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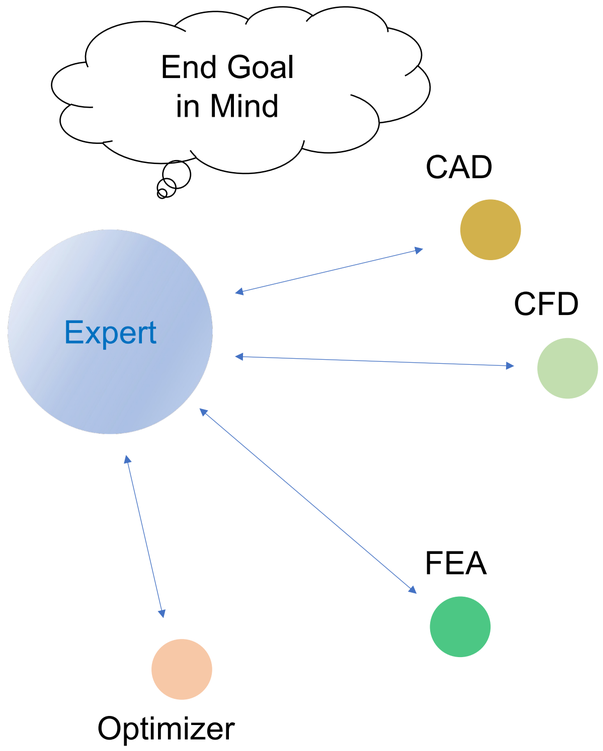
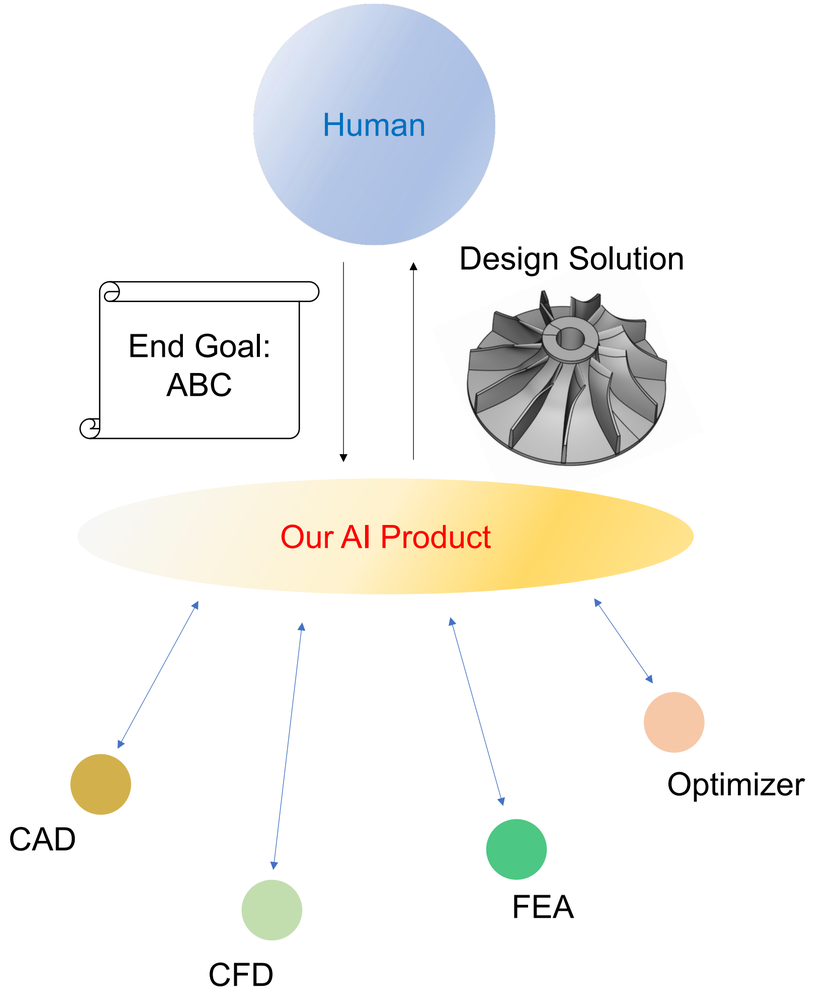
Our Product *AI Tool Encompassing CAD and CAE*



Paradigm Transformation
by Mechanical AI



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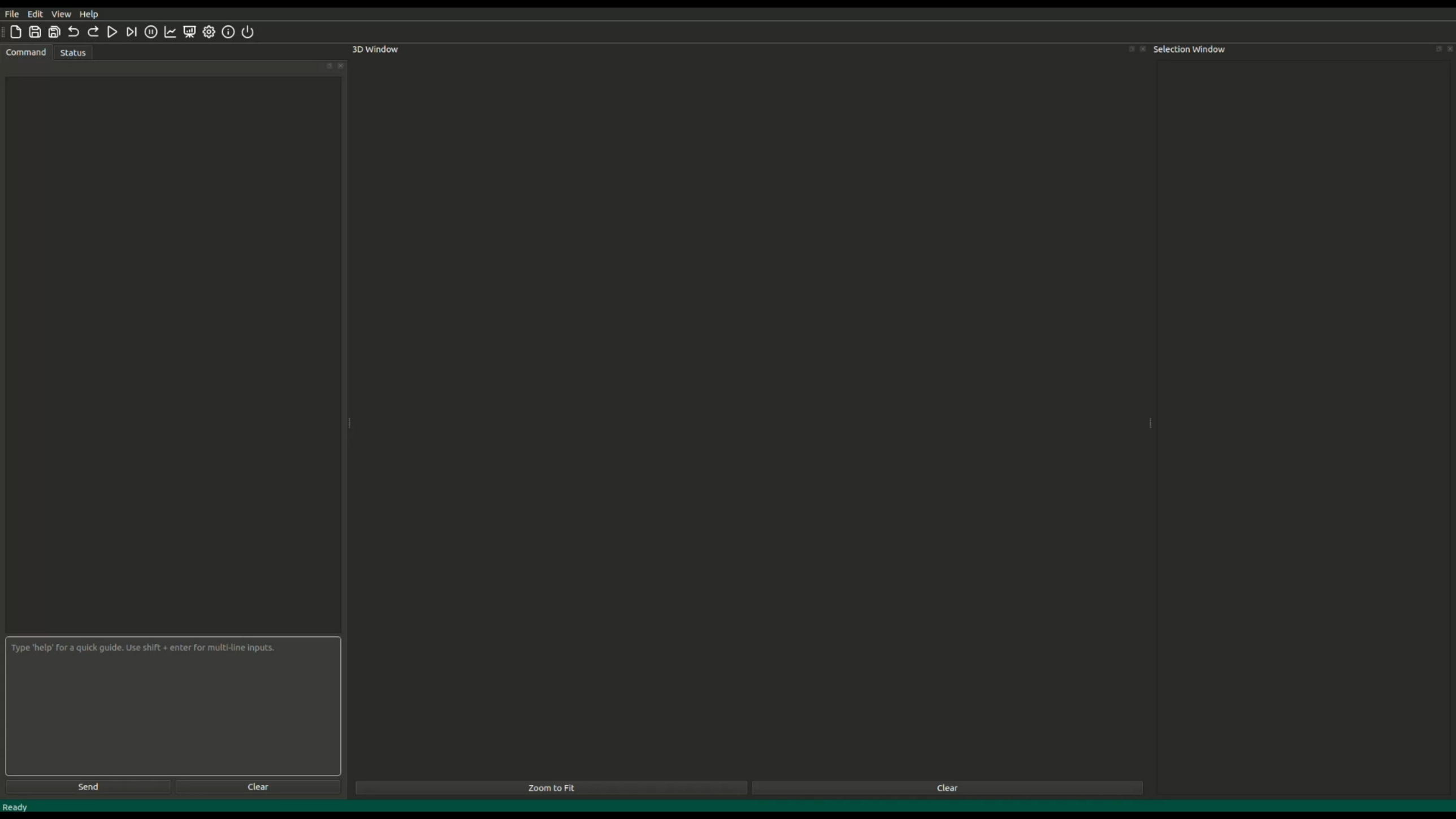
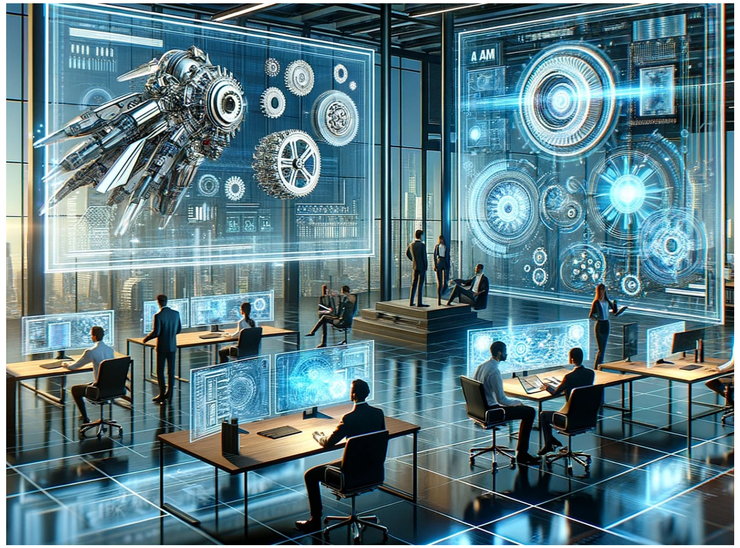

File
Edit
View
Help
Command
Status
3D Window
Selection Window
Type 'help' for a quick guide. Use shift + enter for multi-line inputs.
Send
Clear
Zoom to Fit
Clear
Ready

Our Speed *Tremendous Progress Over the Past Two Months*

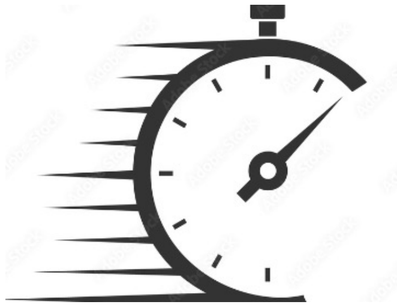
Idea Conceptualized as of September 17



Completed Pilot Project with an Industry Partner — 10/17

Demonstrated MVP to 6 Heavy Industry Companies — 10/25

Raised Pre-Seed of $770k at $11m Valuation — 11/1



Established 2 New Projects for 2025 — 11/8

Commercial Quoting Under Discussion with Industry Partners — Today

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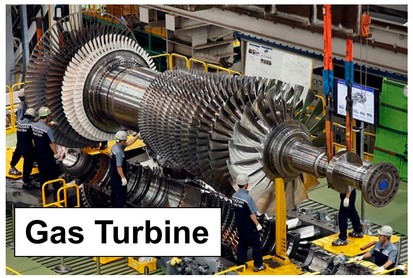
Our Future *Encompassing Entire Heavy Industry Domain by 2030*

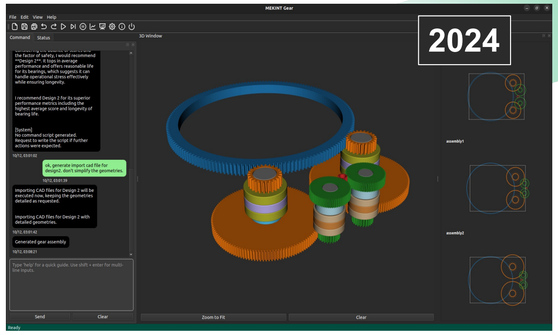


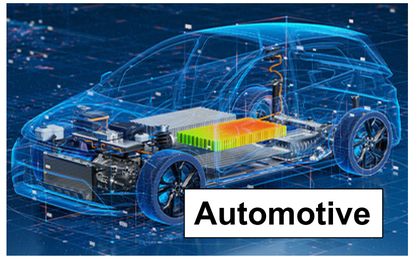


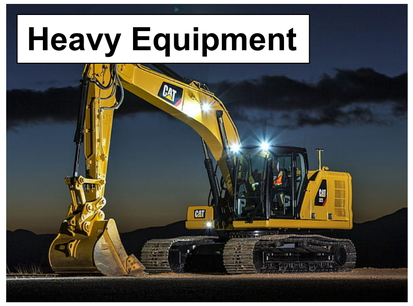


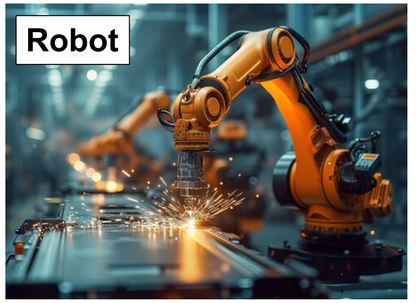


2025 2026 2027 2028 2029 2030









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MECHANICAL AI

Confidential and Proprietary

PLUG AND PLAY

SV SUMMIT

STARTUP PRESENTATION

APOHA

Apoha

Aphoa is the Liquid Brain unlocking nature's operating system using sensory intelligence.

#PNPTCSiliconValley

Join us at **pnptc.com**



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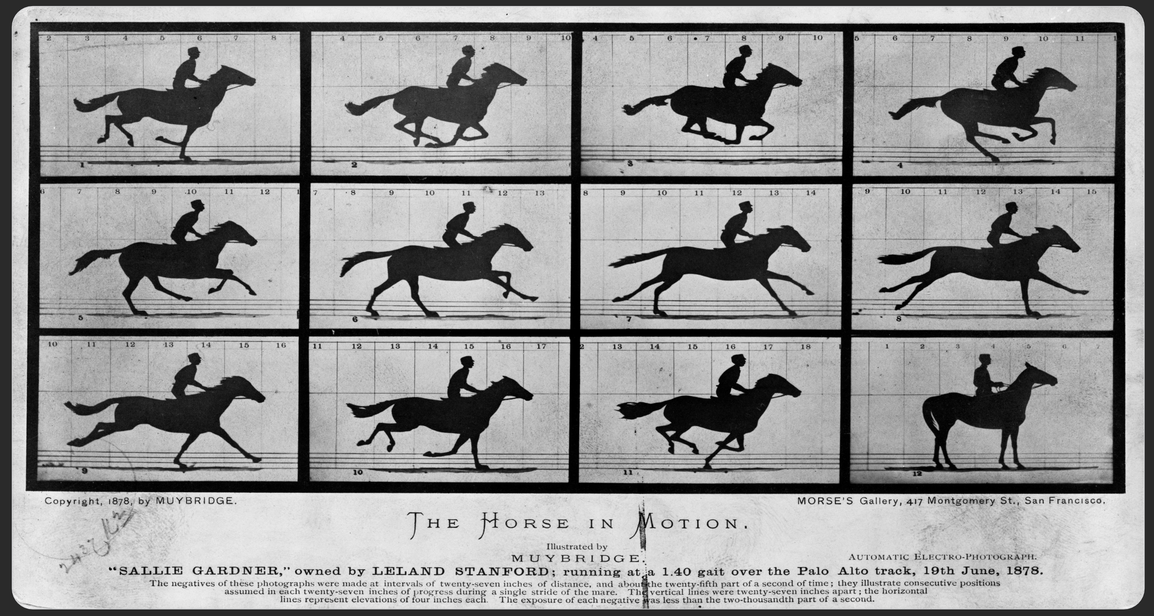
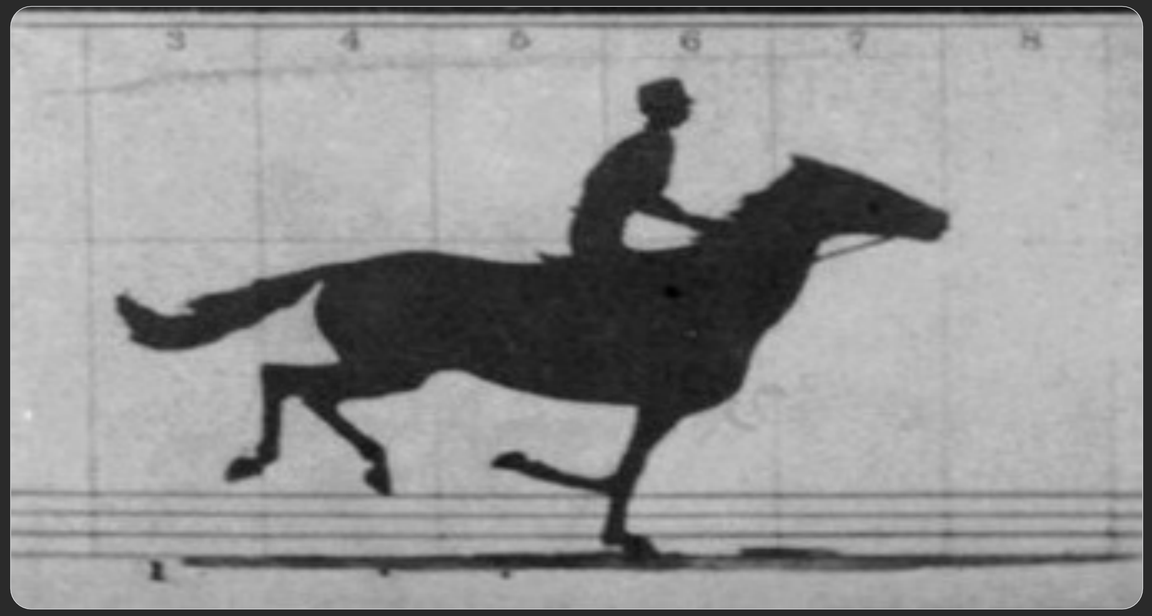
Frontiers of material science remain elusive

To reach human-level sensory grounding, machines need to process the full spectrum of reality - **this needs a paradigm shift in computing.**



State-of-the-art captures snapshots of the reality…



…that are aggregated to generate an approximation – helpful, but not quite the same as reality

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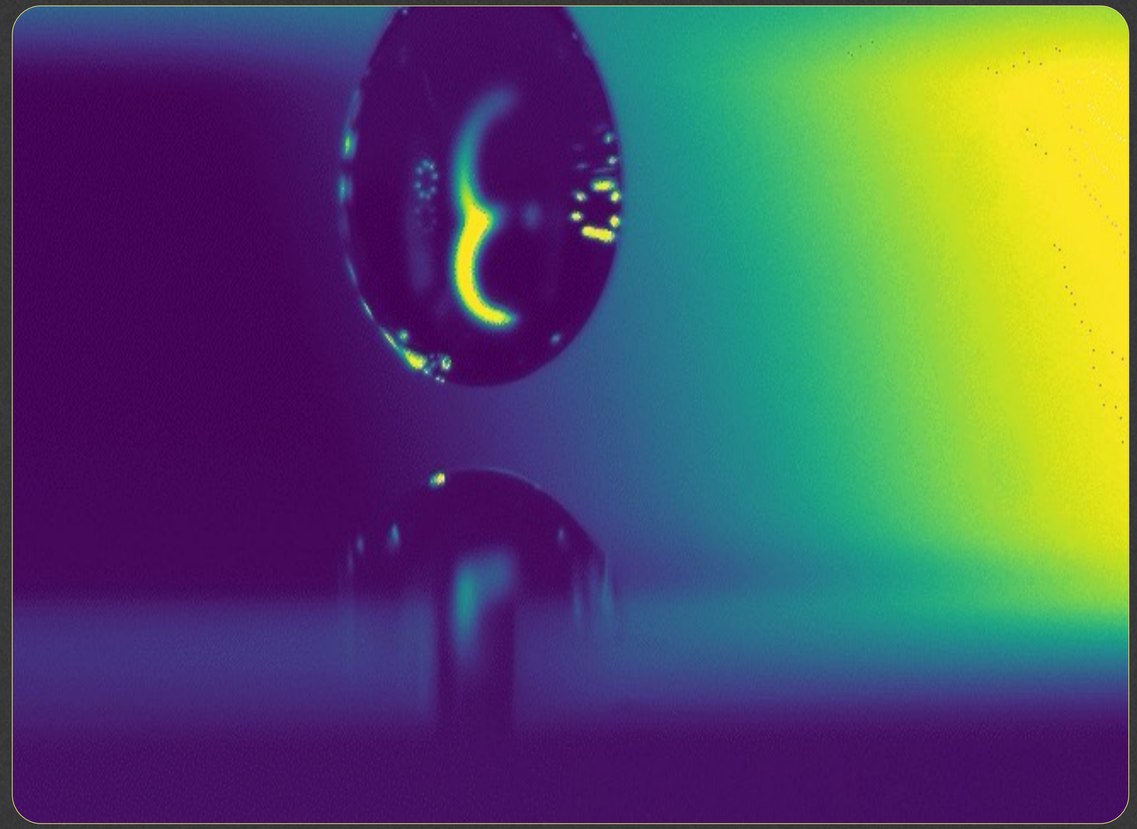
ΛPOHΛ

Inspired by nature, we built the first sensory intelligence: The Liquid Brain

A groundbreaking invention that mimics the sensory mechanics of real neurons, unlocking new possibilities in material science and biotherapeutics.



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Our Vision

Liquid Brain will be to materials what GPS was to travel: a foundational tech guiding us to new, uncharted materials and formulations.

- Enables the generation of ultra rich data at ultra-low cost
- Foundation for training generative models that aid in designing new materials
- Create an exhaustive data economy across all materials unlocking new frontiers for research

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This technology is the culmination of decades of ground-breaking research....

Waves in neurons have a lot in common with waves in a liquid!

WE ARE ONE OF THESE DISCOVERIES



1962

M. Eigen

Nobel in Chemistry on observing "immeasurably fast reactions" using sound waves

1988

K. Kauffman

Published a thermodynamic theory of nerve communication

2005

T. Heimburg

Published seminal paper on neuron physics

2008-14

S. Shrivastava & M.F. Schneider

Published first evidence of neuron like behaviour in an artificial material

2017

Research highlighted by Scientific American and Spektrum in revolution in Science issue

2018

S. Shrivastava

Filed patent through the University of Oxford

2021

Launch of Apoha

Upon **successful prototype** demonstration to Thermofisher

2023

Apoha publication

Demonstrated how to scale Liquid Brain's compute with material complexity

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...and built by a team that brings together the best of industrial science, engineering and product expertise

Goldman Sachs

University of Oxford

Harvard University

Dartmouth

EPFL

London Business School

University of Glasgow

McKinsey & Company

University of Colorado

University of Cambridge

Qualcomm

Paul Scherrer Institut PSI

King's College London

Boston University

BCG

DuPont

Faculty of Mathematical and Physical Sciences UCL

Georg-August-Universität Göttingen In Publica Commoda seit 1737

APOHA

Founding team



Shamit Shrivastava

CO-FOUNDER & CEO

Inventor of synthetic neurons and cutting-edge scientific systems with 20+ publications.

Research @ University of Oxford,
PhD @ Boston University,
B. Tech. Mechanical Eng. @ IIT Guwahati



Anshika Srivastava

CO-FOUNDER & COO

Expert in linking technology with products that customers want. Built and launched tech platforms globally.

Ex Goldman Sachs- Product & Strategy, COO @ Marcus Tech UK,
MEM @ Dartmouth College

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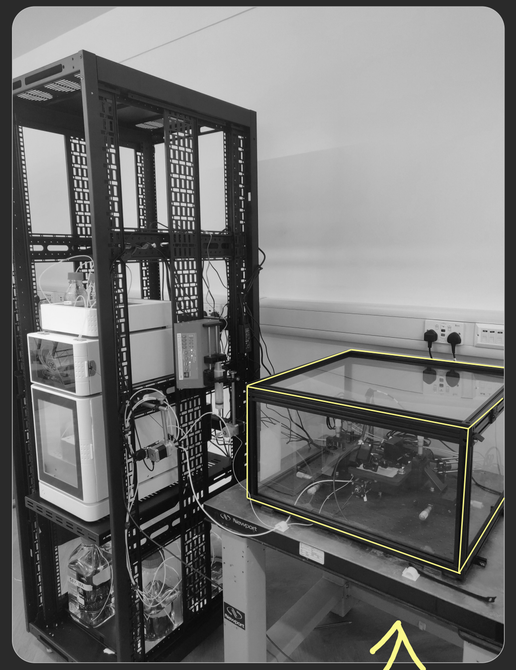
The Liquid Brain® is ready for early customer testing...

Benchtop Device



The Liquid Brain®

Data Analysis

Data windowing, feature extraction and variation analysis

Dimension reduction, higher order clustering, predictions

Results in Interactive UI



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…and is already solving real world problems across several industries

ThermoFisher SCIENTIFIC

Valink Therapeutics

★ Leading speciality mineral company

THS

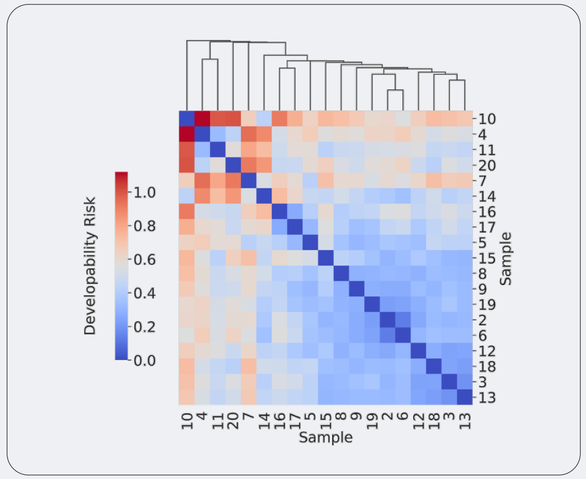
OSLOMET

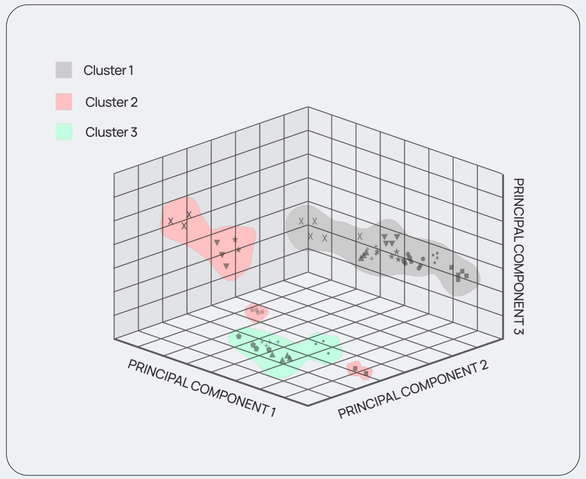
marico

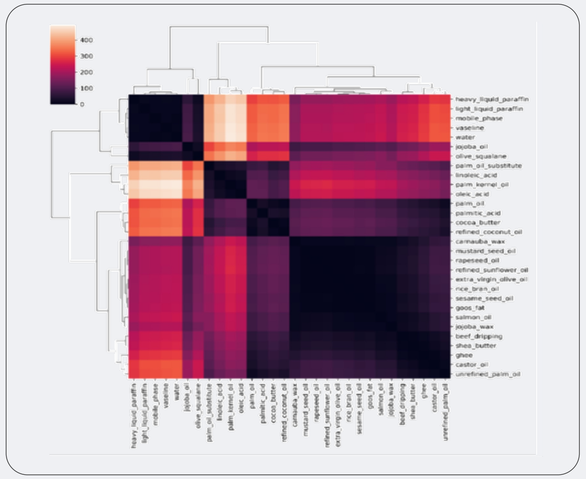
★ Top-5 Agri Tech company

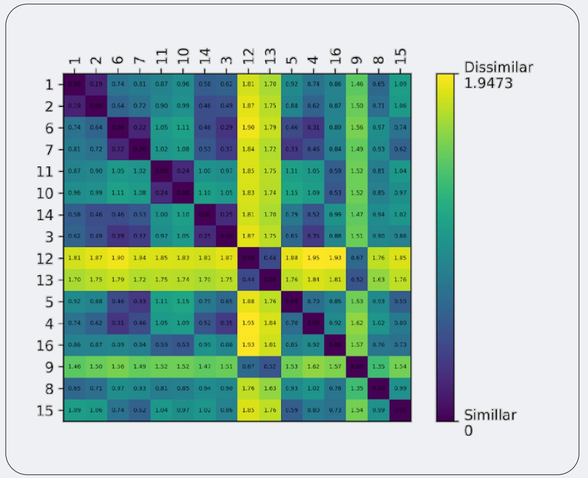
ETHRIS

MYTHIC THERAPEUTICS









Antibodies

Classify and characterise antibodies, including ones differing by point mutations, with 90% accuracy

Food Protein

Rapid screening of plant protein formulations to match the taste and texture of real chicken

Natural Oils

Predicting sensory profile of beauty formulations; correlating with large customer panel dataset

Oil - Polymer Blends

Identify formulations that would functionally match the champion beauty product in the market

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Earthena

Earthena unlocks the full potential of climate data and transforms it into actionable insights.

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Join us at **pnptc.com**

earthena

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Silicon Valley Summit

November 2024



Climate Forces Are Simultaneously Creating Exponential Opportunity & Risk



Muni Bonds Helping Civic Bodies Go Green

From BMC's ₹10,224-cr climate budget to VMC's green bonds, sustainability is key

Climate Change to Cause $38 Trillion a Year in Damages by 2049

Emerging markets set to lead pack on renewable energy as costs keep falling

Heart of wet season ends in state with big fears of drought

Doing good with emerging technologies

Why business strategy can't ignore CSRD in a net-zero world

Bulk water use tariff hiked by 100%

Opinion The Top Line

Climate change turns up the heat on supply chains

Solar Panel Prices Are Falling Again

The global average price for a monocrystalline silicon solar panel was o

50% of country in grip of drought, say

'Recovery and reuse of waste w play key role in India's growth st

New rules propose availability-based rate for renewable power

Incoming EU carbon tax will raise cost of a car by €580

Greener, better, safer

ASIA ECONOMY

Global shipping industry disrupted again, this time by floods in Europe and China

Boom in sustainable fashion market increases job opportunities

Science

na faces 3% GDP loss as heatwaves intensify, hit global sup ins: climate change study

Developing world needs private finan for green transition, says Cop presider

In 15 yrs, state sees 13 droughts and 80% of its land turn arid

Driving net-zero: how climate change is disrupting the global supply chain

'Greenwashing' Looms as Cos Fret Over ESG Rules

CLIMATE CHANGE

Tech has many irons in fire to aid sustainability

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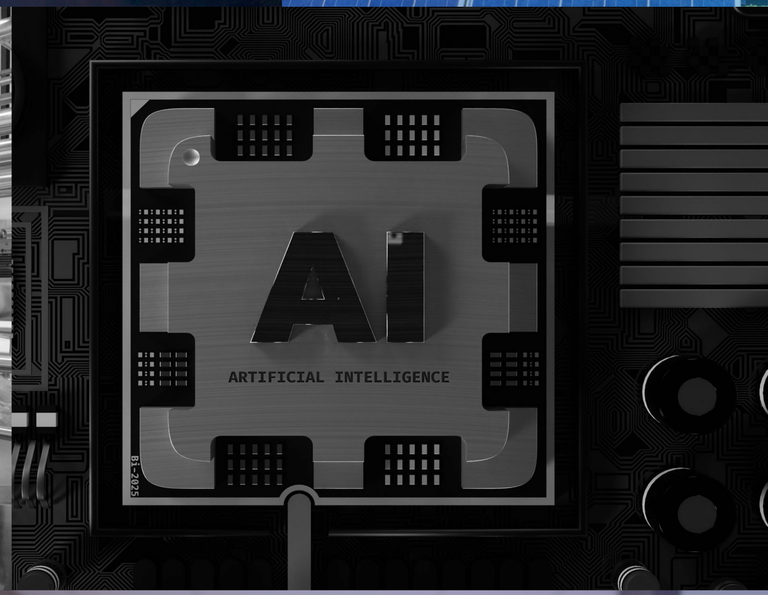
How to Create Business Value in the Face of this Complexity?

- ? Multiple Forces, Constantly Changing
- $ Unclear Financial Impacts
- ! Data Without Actionable Insights

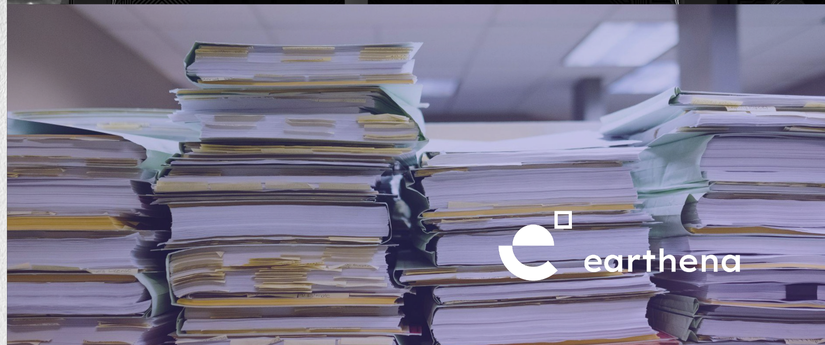












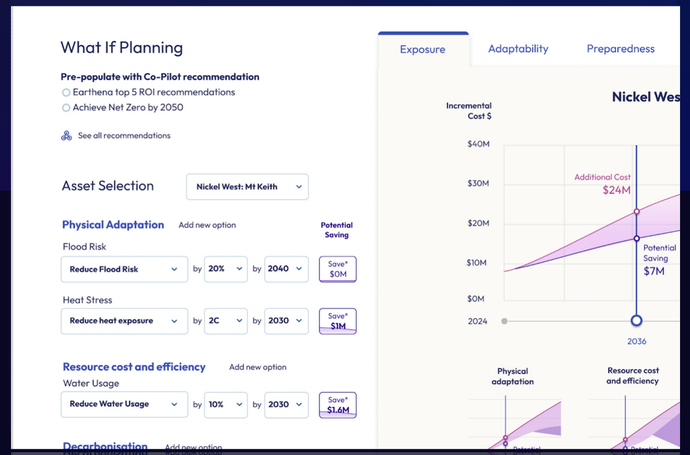
Introducing The Power of Climate Decision Intelligence (CDI)

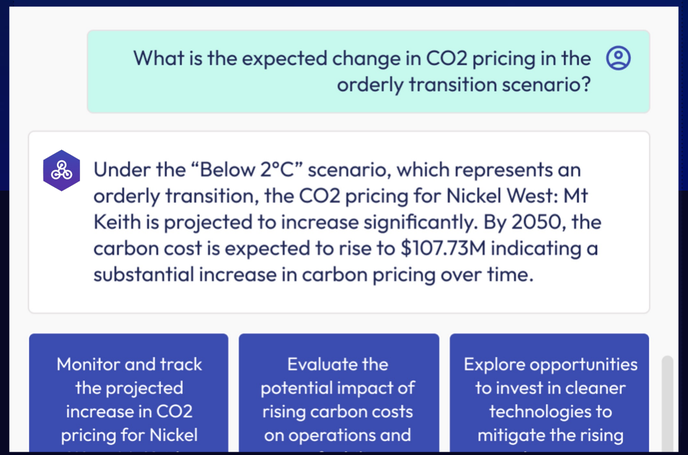
Quantify your climate-related financial performance

Generate actionable recommendations with clear ROI

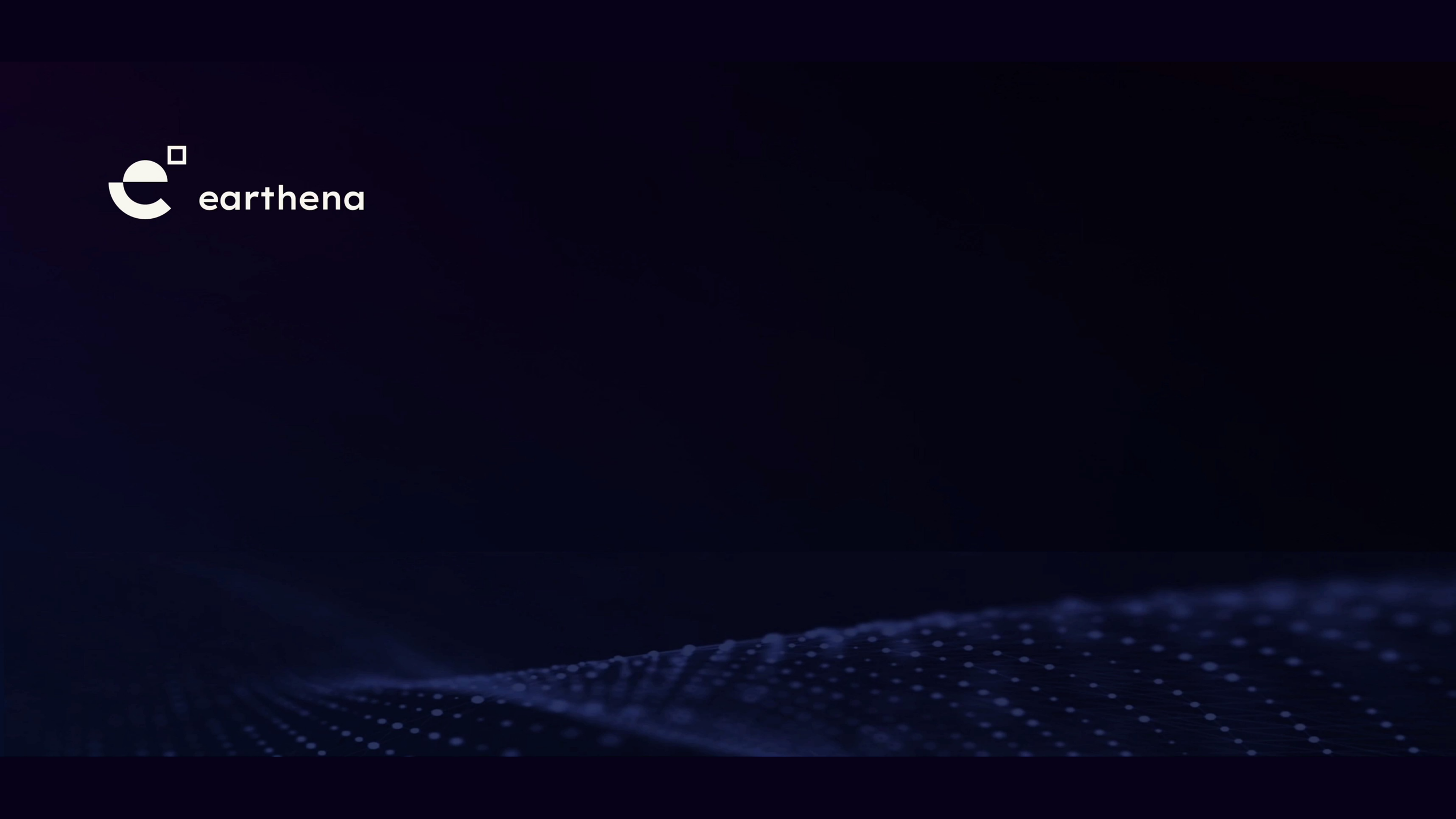
Deliver business value, resilience and competitiveness







earthena

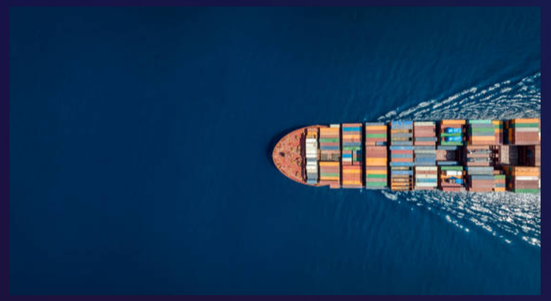

earthena

Unlocking Value through AI-Powered Climate Decision Intelligence

Global ESG Platform

Optimized supply chain resilience and delivering ROI -driven recommendations

(Supply Chain Agent)



Global Audit Firm

(big 4)

Financial impact quantification on climate risks, providing superior insights in less time

(Quantification Agent)



CPG Company

(FTSE 100)

Cost savings and >90% faster to meet climate related reporting requirements

(Reporting Agent)



earthena

Leaders in Climate Intelligence & AI

Team Expertise:

- Climate Science
- AI & ML Data Engineering
- Financial Analytics



Iggy Bassi
CEO

Serial climate entrepreneur and globally recognized thought leader



Karan Chopra
CPO

Expert in AI product development with multi-channel GTM experience.

Dr Ben Calderhead
SCIENTIFIC ADVISOR

Authority in ML/Bayseian Statistics

Gil Friend
SUSTAINABILITY ADVISOR

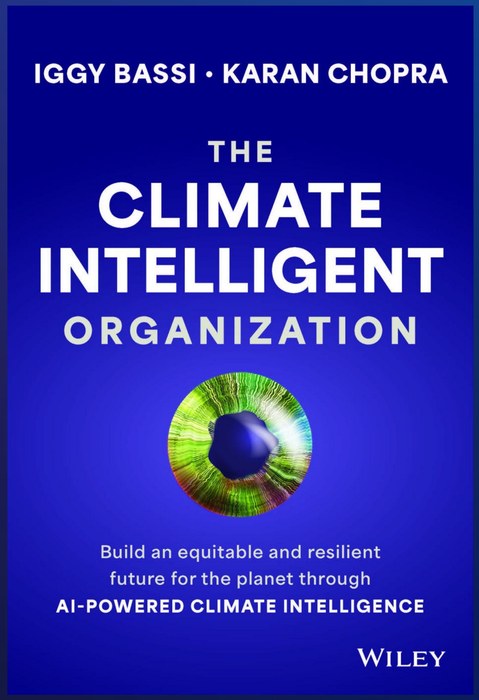
Global authority on sustainability

Tyler Harnish
CLIMATE TECH ADVISOR

Expertise in enterprise-level climate tech

Rahul Iyer
ENERGY TRANSITION ADVISOR

Renowned expert in energy policy and transition strategies



Publishing Q1/25

50+ published papers across climate, AI, and data science—leading the way in AI-driven climate innovation

earthena

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Innovating with the leading companies in the world…

…to accelerate better outcomes for you and our planet

earthena

Thank you

karan@earthena.ai
www.earthena.ai

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MorphoAI

MorphoAI is specification-driven invention of cyber-physical systems.

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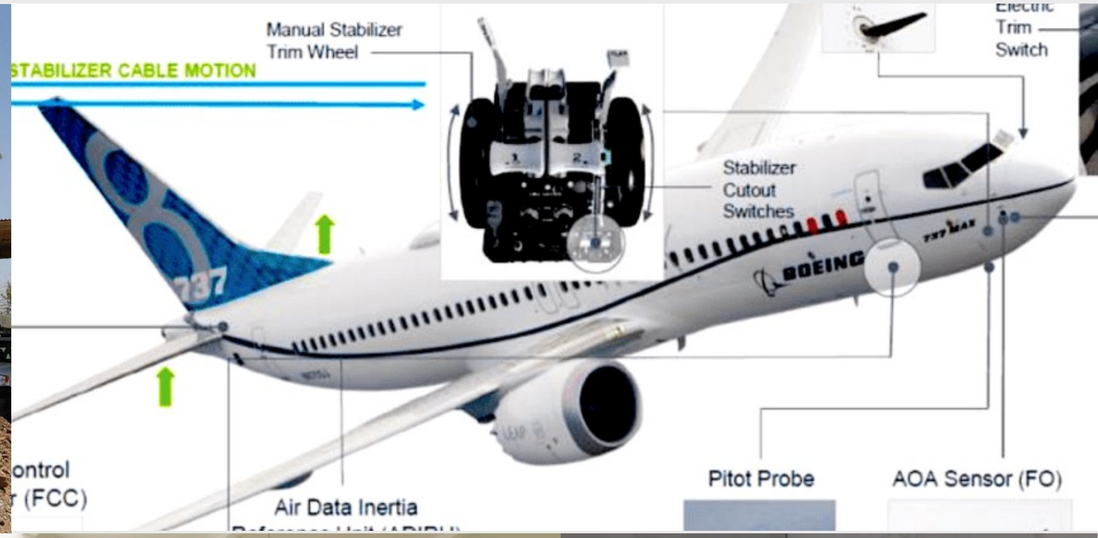
AI-Powered Computer-Aided *Invention*

Get Ready To Invent Like A Morpho

Andrew Spielberg, *Founder & CEO*


ABB
0016


JCB
USA


Manual Stabilizer
Trim Wheel
STABILIZER CABLE MOTION
Electric
Trim
Switch
Stabilizer
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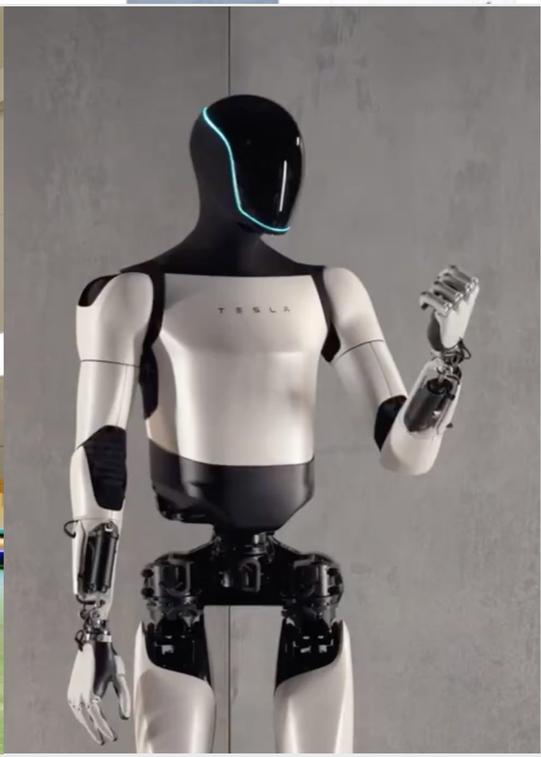
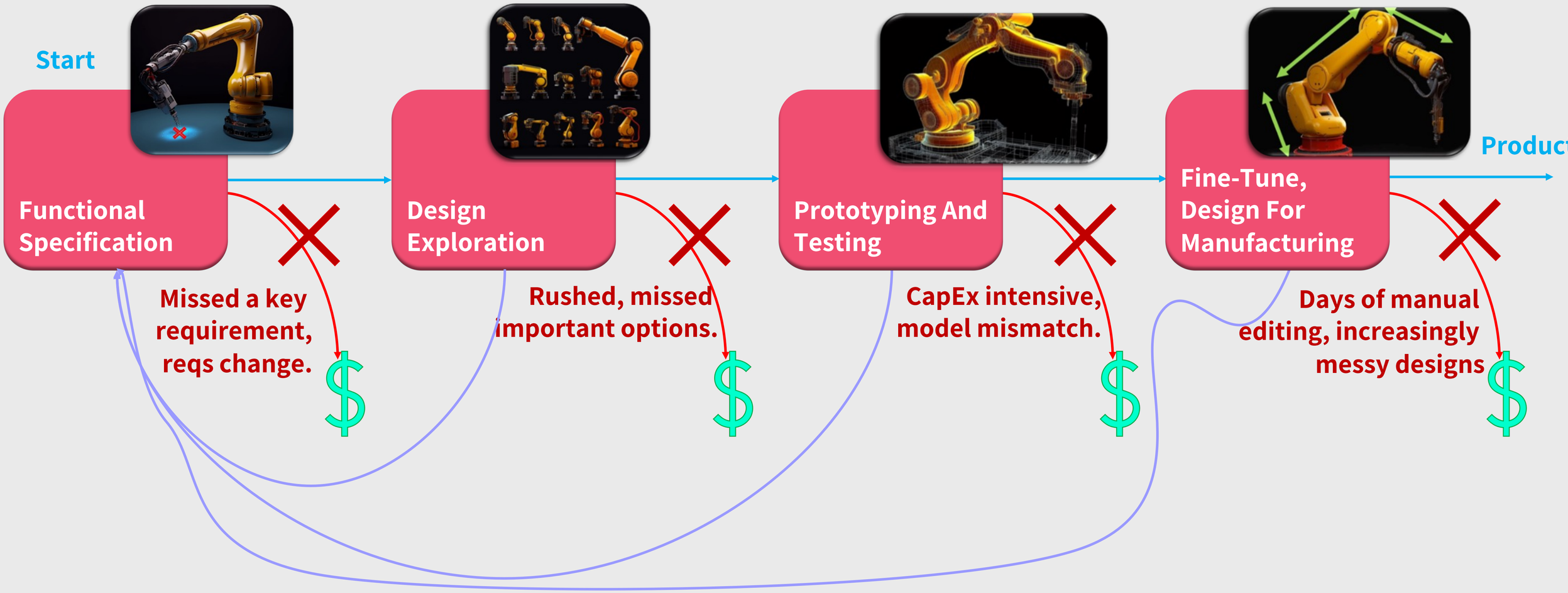
BOEING
ontrol
r (FCC)
Air Data Inertia
Pitot Probe
AOA Sensor (FO)


robominds




TESLA

Problem: Cyber-Physical Design Is Full Of Critical Failure Points That Waste Time, Money, & Opportunity



Beachhead Customer Profiles

Industrial Robot BUILDERS

- Low volume of customers,
  High value per customer
- Priorities: Minimize cost,
  Maximize utility to customers



Industrial Robotics BUYERS (Integrators)

- High volume of customers,
  Less Value per customer (But still large!)
- Priorities: Maximize design speed,
  Realize new opportunities



Our Technology Addresses Both Customers' Problems With A Shared Method

MorphoAI
Automates Hardware + Software At Each Step

Co-Optimize Systems For Cost And Performance

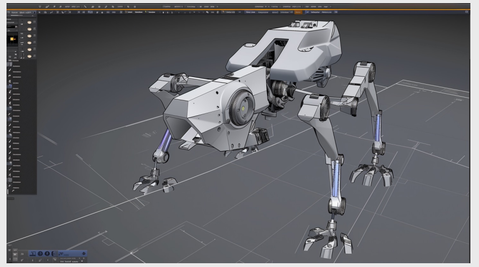


Fine-Tune, Design For Manufacturing

Adaptive Digital Twins:
What **Y**ou **S**im **I**s **W**hat **Y**ou **G**et



Prototype & Test



Unifying Interactive Environment



Dataset-Free Generative AI Provides Design Exploration

Explorative Design



LLM Co-Pilot Aligns Specifications With Mission Objectives

Specify Mission Objectives

More Time Thinking,
Less Time Clicking.

The Team That Did The Research in CAD, AI, Startup, And SaaS Business Experience

Tackling a $400B Opportunity



Founder/CTO:
Andrew Spielberg, PhD



(Trial) Co-Founder/CEO:
Ayna Arora, MBA



Head of Research:
Allan Zhao, PhD



Head of Engineering:
Han Wang, M.S.

Core Team



Industry Advisor:
Bhupen Lodhia, PhD/MBA



Scientific Advisor:
Zac Manchester, PhD

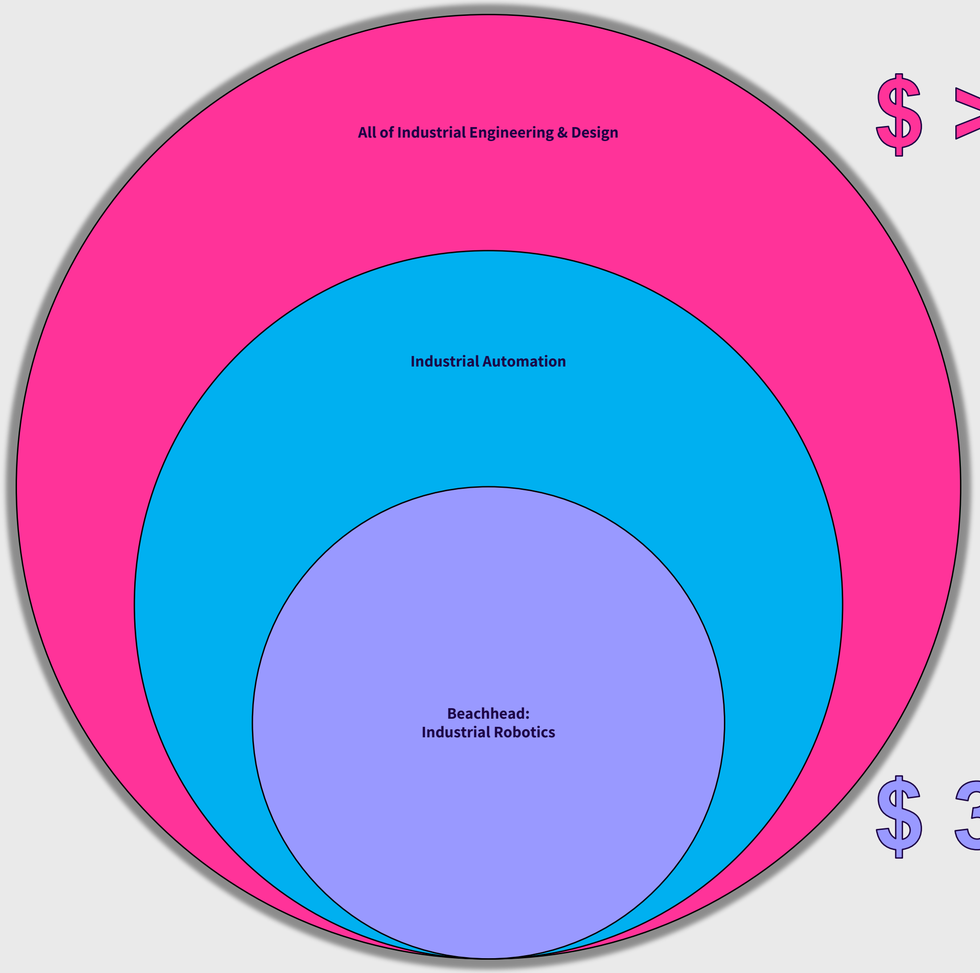


Mentor:
Debi Kleiman, MBA



Mentor:
Paul Hayre, MBA

SOM-To-TAM: From Improving Robots To Inventing *Everything*



$ >250B



$ 197B



$ 30.5B



(Ex: 550,000 industrial robots sold per year
Each needs bespoke customization.
≥ 2 months of work @ $10,000 / mo.)

(All markets amts already scoped to only the design aspects we address.)

Major Announcements

- First product release coming this month. Come see me for a demo!
- Negotiating first paid contract with our design partner.
- Additional LOI finalized, with three more companies likely to sign an LOI or as customers.
- Major vertical integration partnerships secured.
- Still seeking lead or co-lead investor --- but significant follow-on funding is lined up!
- Finalizing a $~3MM non-dilutive grant --- completely aligned with our business model.

B2B SaaS Model With Deep Customer Acquisition Strategy

Discussions

Pending

Confirmed

Exposure

Free Demo

- Robotics Plugins
- Strategic Partner Integration
- Design Partnerships

Customers

Partners

Market Penetration

Low-Cost Entry-Level Package ($1k)

- Standalone Package
- CAD Plugins
- Vendor Integration

Conversion/ Upsell

Full Design Suite ($10k+)

- Research Publications
- Strategic Consultancies
- Educational Licenses

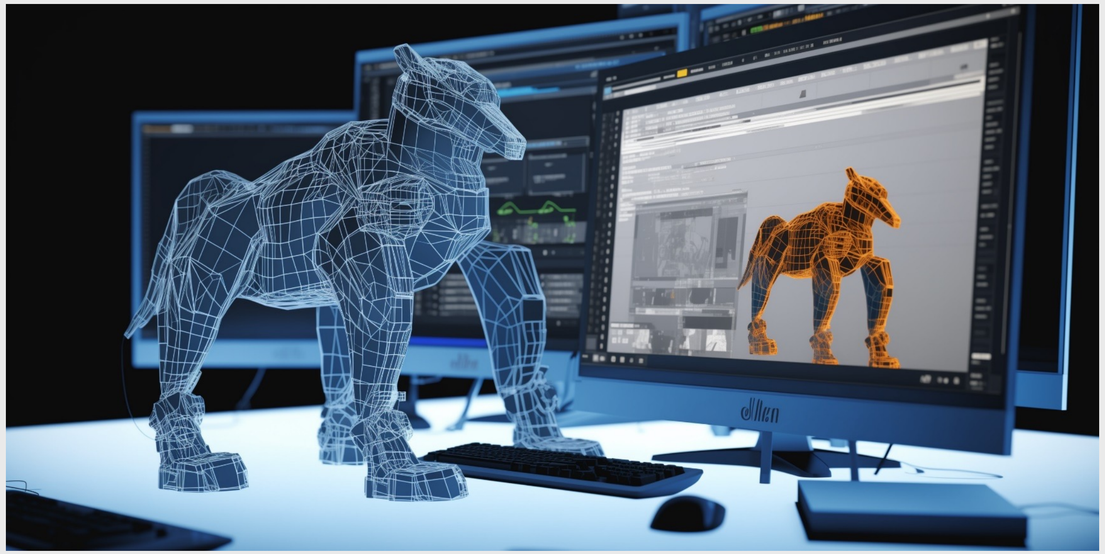
Growth

Additional Add-On Packages ($+2k ea.), Tons Of Additional Monetization Options

- Research Partnerships
- Tradeshow Presence
- API/Data Licensing

MorphoAI

Agile Computer-Aided Invention
For A World In Motion



Andrew Spielberg, *Founder & CEO*

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STARTUP PRESENTATION

vorausrobotik

Voraus Robotik

Voraus Robotics combines robots, sensors, and AI-driven software to improve efficiency, with and open vendor-neutral framework.

vorausrobotik

SOFTWARE PLATFORM FOR INDUSTRIAL AUTOMATION.

Your Automation.
Our Software.
No Limits.



Christoph Brenken | Tech Partner Director, christoph.brenken@vorausrobotik.com

voraus robotik GmbH
Carl-Buderus-Straße 7
30455 Hannover, Germany

+49 511 89810600
info@vorausrobotik.com
vorausrobotik.com

THE RISK IS RAPIDLY GROWING

Number of available experts to fulfill automation potential.

WE HIGHLY DEPEND ON MISSING EXPERTS.

2024

- 700 k missing expert

2030

- 5 million missing expert

The automation market will collapse.

50%



2024

10%



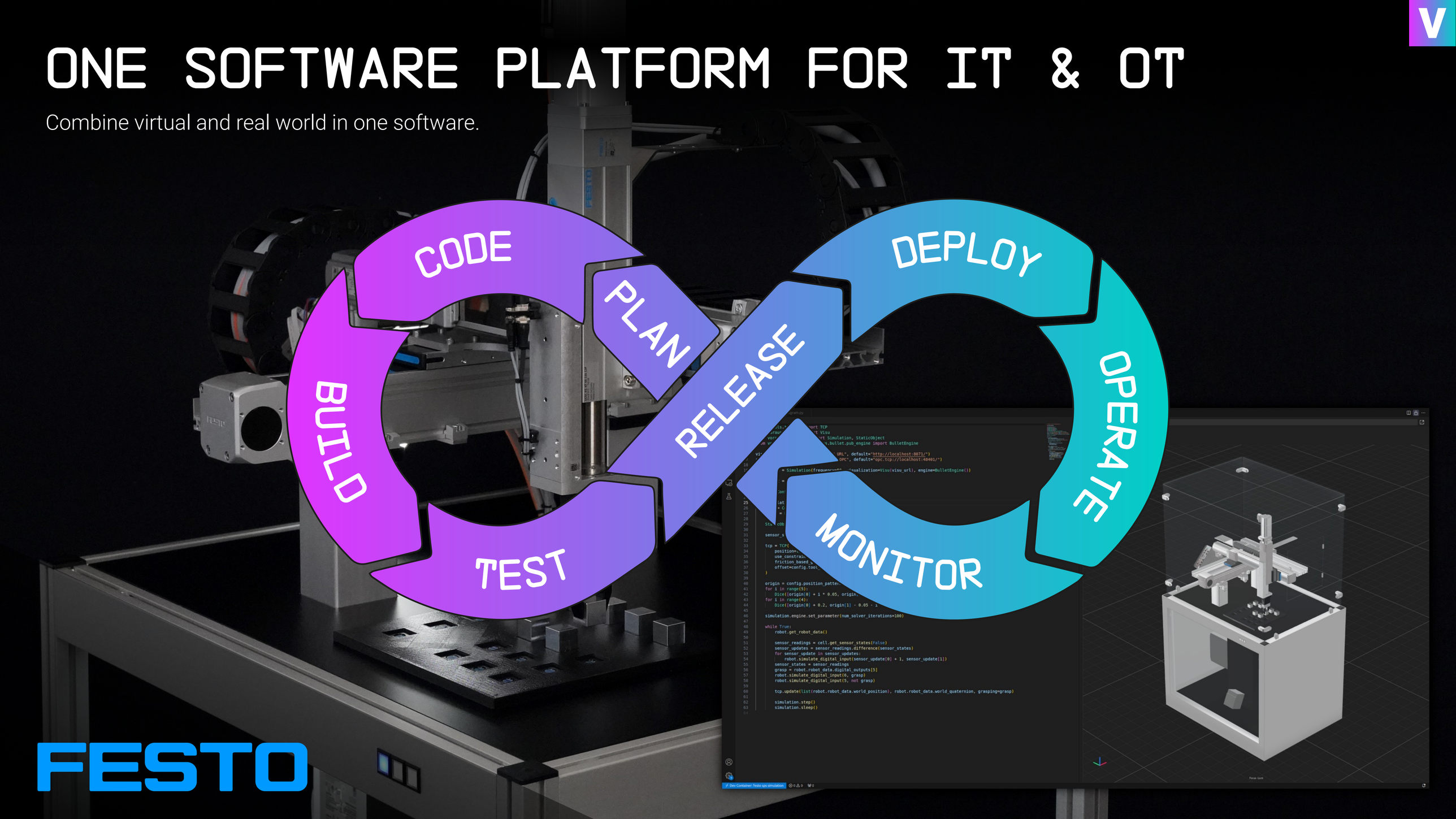
2030

$ 500 BILLIONS

loss on added value worldwide until 2030

ONE SOFTWARE PLATFORM FOR IT & OT

Combine virtual and real world in one software.



FESTO

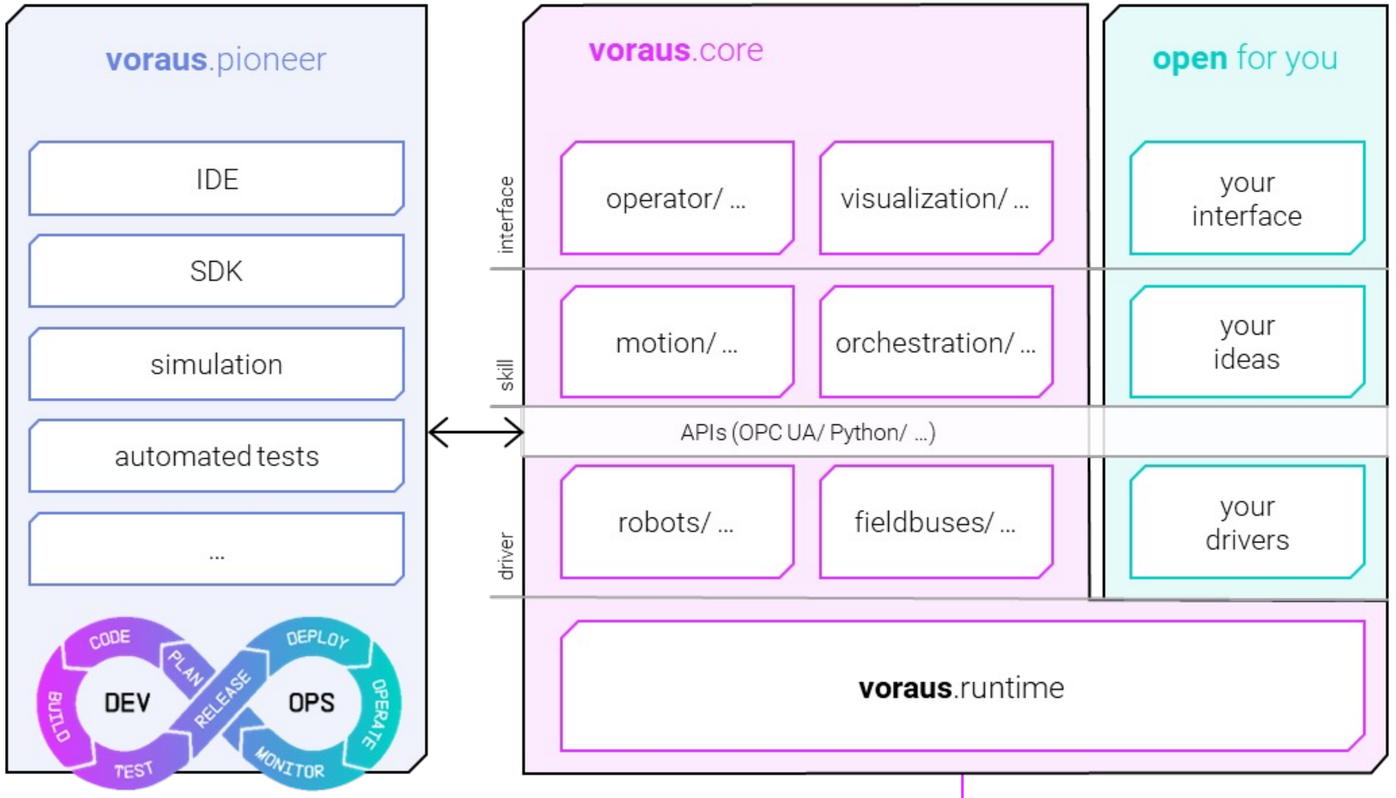
WE ENABLE EVERYONE

We unlock the power of modern software development.

- **Execution** of robots and components.
- **Agnostic** and containerized.
- **Orchestration** of the entire automation.

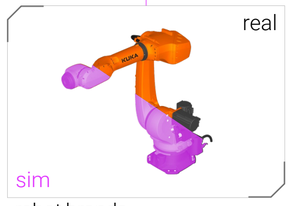
- **Open** and no vendor-lock.
- **APIs** enable you and **unlock ∞ resources and possibilities**.

- **Decoupling** of HW and SW development.
- **Change** running systems: develop, simulate, test, deploy.

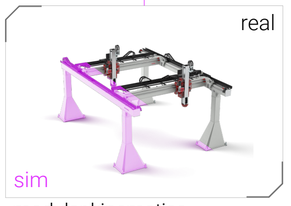




motors



robot brands



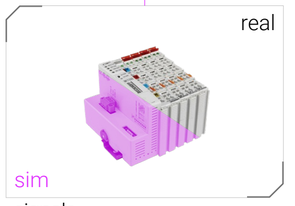
modular kinematics



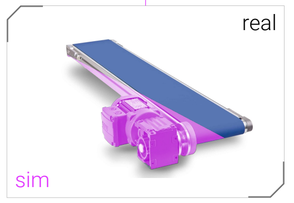
grippers, ...



cameras, ...



signals, ...



conveyors, ...

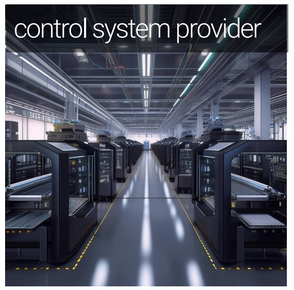
VORAUS ENABLES A NEW GENERATION

25 MILLIONS NEW DEVELOPERS

PROVEN IN USE BY LEADING CUSTOMERS

More than 20 customers and 4 million revenues in 2024.

ENABLE A NEW GENERATION:
FLEXIBLE IT & OT PLATFORM



FESTO

38 % INCREASED PERFORMANCE:
DIGITIZATION OF A FACTORY



GROPYUS

52 % COST REDUCTION:
SIMPLIFY AUTOMATION SOLUTION



BOWE GROUP

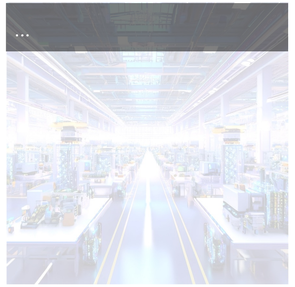
Customers and partners along the entire automation value chain.











EMERSON. KRONES BMW FANUC KUKA AGILE ROBOTS ESTUN rexroth A Bosch Company SCHUNK Fraunhofer IFF ...

WE BUILD THE NEW STANDARD FOR AUTOMATION ACROSS ALL VERTICALS

We enable a world in which everyone works more efficiently and lives better, through automation.

WE COMBINE UNIQUE TECHNOLOGY AND A CHAMPIONSHIP TEAM.

02/2017 — 03/2022 | **Yuanda Robotics** GmbH

Award-winning, certified collaborative robot with human-like senses.

since 04/2022 | **voraus robotik** GmbH

Android of automation | 100 % management owned.



vorausrobotik

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Christoph Brenken, Tech Partner Director
christoph.brenken@vorausrobotik.com



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vorausrobotik.com

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Hanomi

Hanomi is reimagining hardware design with multimodal AI.

#PNPTCSiliconValley

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HANOMI

Reimagining hardware design with multimodal AI

Proprietary & confidential

Hardware Design Crash Course

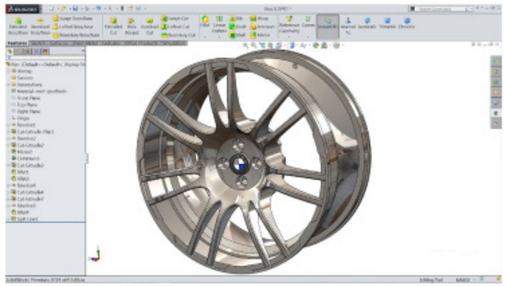
Each component of a hardware product must undergo **4** design **steps** before being produced.

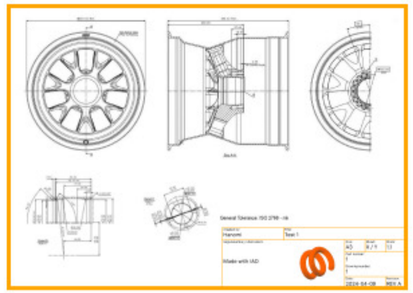
Your car has 30k components.

1 Sketch → 2 3D Render → 3 3D Detailed Design → 4 Manufacturing Specs. → 5 Production





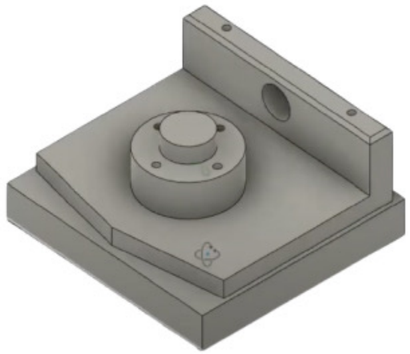






Repeat 30 000 times

Today Hanomi reduces **weeks to minutes**



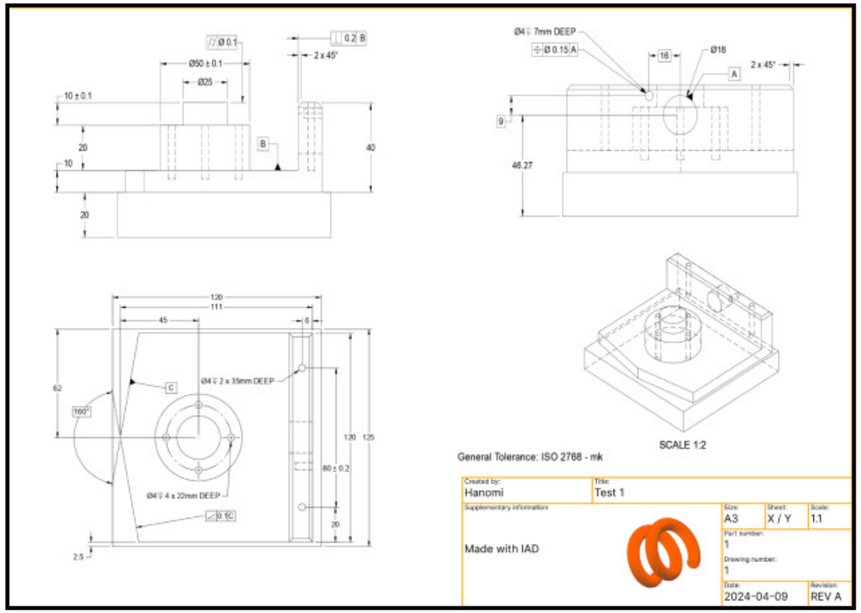
3D model with **context**:
- design intent
- manufacturing process
- part material

3D Detailed Design

Multimodal AI

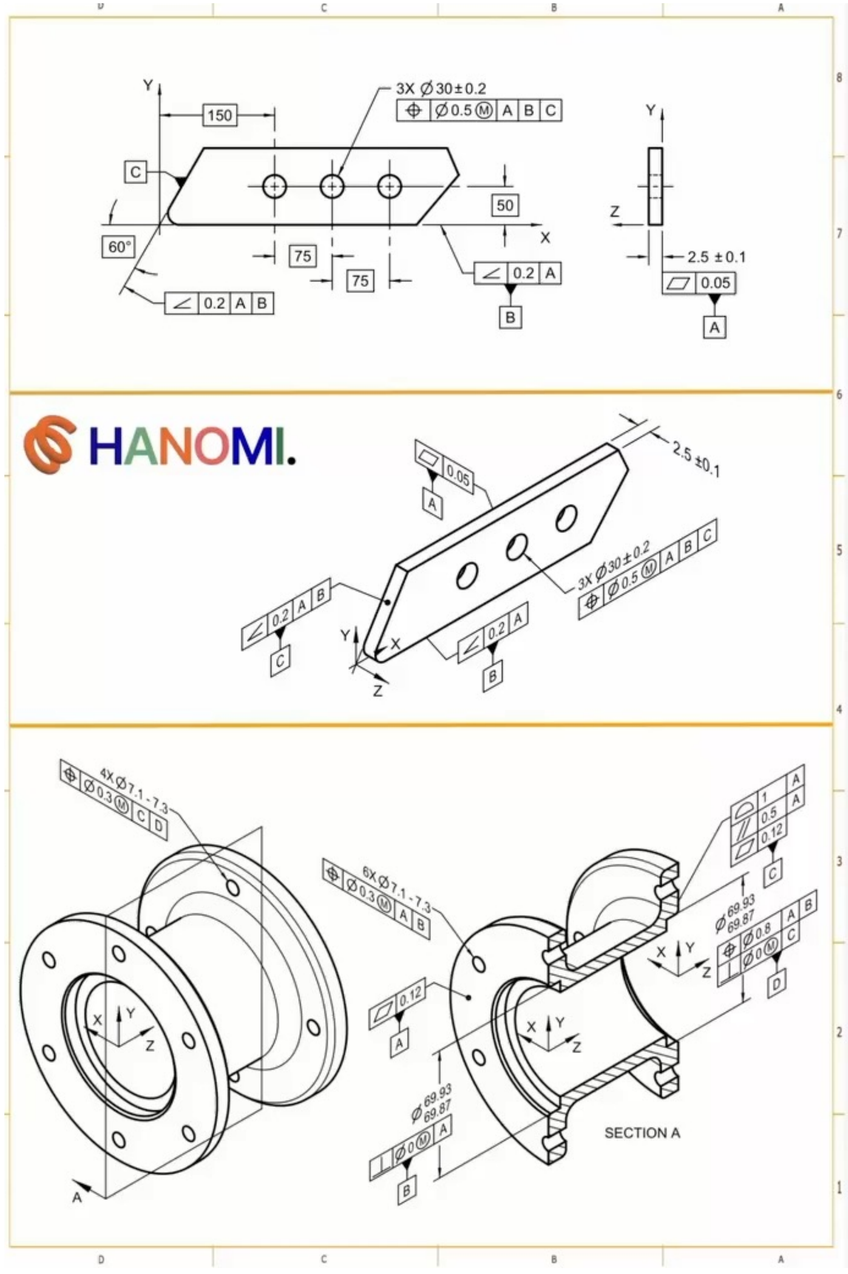
- **RLHF + Graph Neural Networks + VLM + Engineering rules of thumb**
- AI models trained on data provided by our design partners

Automatic Iteration on Feedback



Manufacturing Specs

Proprietary & confidential



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Welcome back! Please enter your details.

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Password

Remember me

Forgot Password?

Login

Not Registered Yet? Create an Account

CEO

Marco Mascolo



CTO

Drishti Bhasin



WILLIAMS RACING

NumPy

Imperial College London

IIT ROORKEE

Still in Closed Beta, But...

15 Companies sharing proprietary data











24+ Engineers from top firms using Hanomi

CAD Agnostic

ASME Y14.5

10 Companies in the pipeline including a US company doing $0.5B in ARR

Targeting Manufacturers to Enter the Global Hardware Market

$45M	→	$9B	→	$15.6B
Target		**SAM**		**TAM**
3-axis CNC + Metal Sheet		Multi-axis CNC, injection moulding		all manufacturing processes
niche in precision engineering components		automotive and aerospace in US and EU		automotive, aerospace, consumer electronics, robotics, medical devices, semiconductors globally

Commercial Ask:

Introduction to **engineering managers in R&D teams** within Manufacturing and OEMs

Backed By

HOF CAPITAL

Bessemer Venture Partners

+ Others

PRECURSOR VENTURES

TSIC TINY SUPERCOMPUTER INVESTMENT COMPANY

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TRANSPOSE PLATFORM

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Don’t Be Shy!

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Avicena

Avicena makes high bandwidth semiconductor interconnects.

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AVICENA



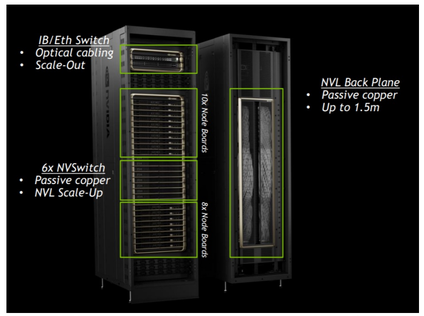
Advanced computing

with microLED Interconnects

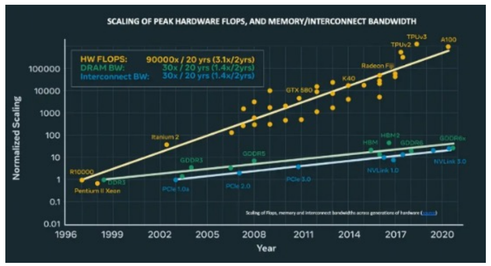
October 2024

The problem

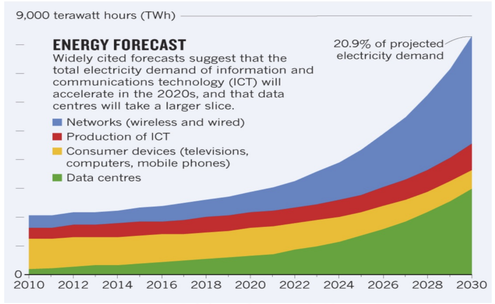
Moving data is the bottleneck
Biggest issue in AI
Uses most of the energy (Cu lines ½CV^2)
SerDes consumes power, adds latency
Limits architecture (cache hierarchy)



Cu cables waste energy, limit AI



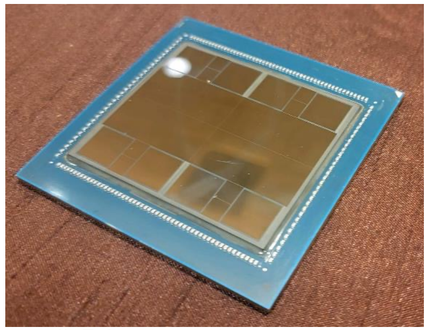
Switching progresses faster than networking



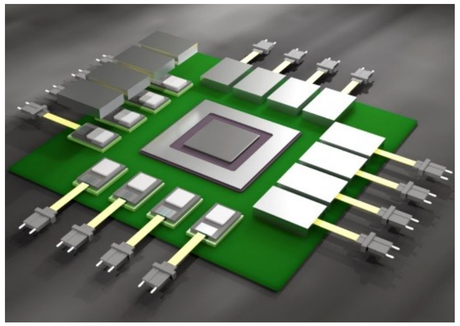
IT consuming 20% of world's electricity

Current Approaches

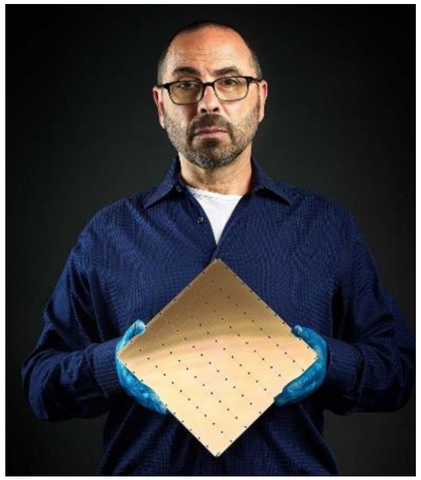
Shrink distances
Stay on chip
Silicon interposers, 3D packaging
Silicon Photonics



2.5D integration



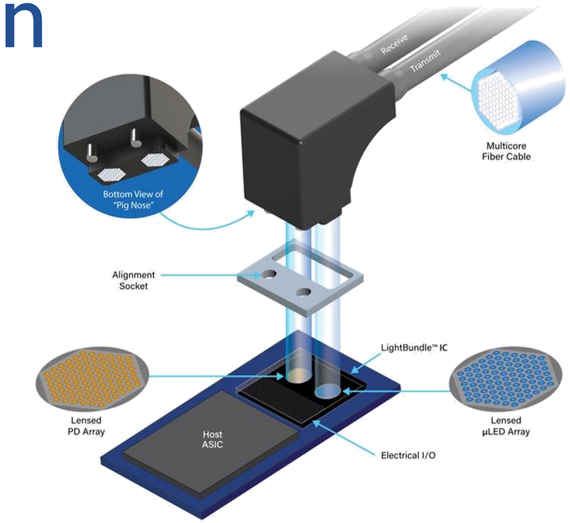
Si Photonics co-packaging



Stay "on-chip"

Avicena Solution

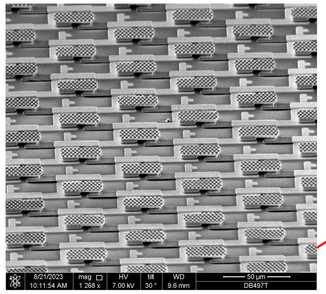
Wide optical bus using µLEDs on Si
>10Gb/s µLEDs
Simple Si photodetectors
Multicore/imaging fiber
100's or 1000's of data lanes,
Leverages display technology
Loose tolerance connectors



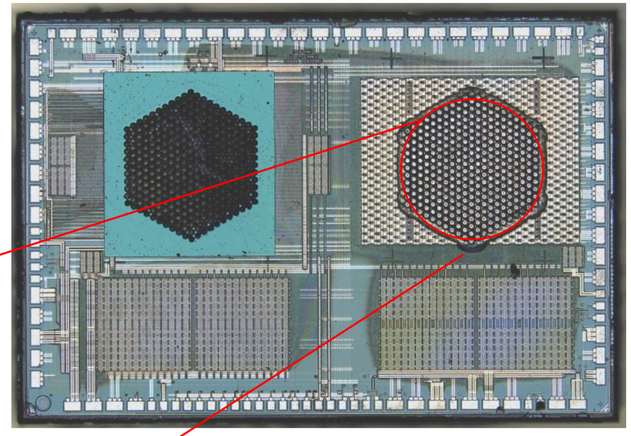
Avicena optical chiplet translates data to images

Pros / Cons

+ Lowest optical power (<1pJ/bit shown)
+ Highest density (>10Tb/s per mm^2)
+ Low cost and robust
+ High temperature reliability
+ On any silicon node
- But <30m reach



µLED array on ASIC

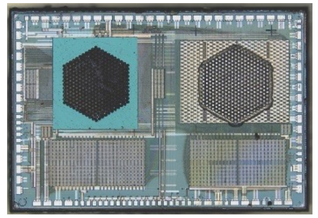


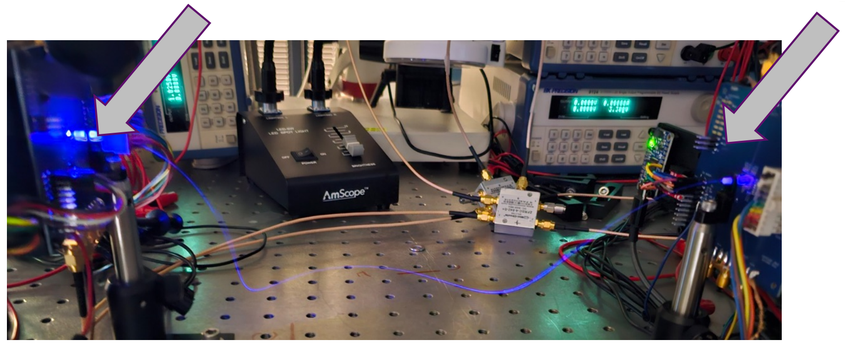
16nm TSMC LightBundle ASIC
(1Tb/s bidirectional, 1pJ/bit)

Avicena solves the fundamental I/O bottleneck in ICs

Demo completed

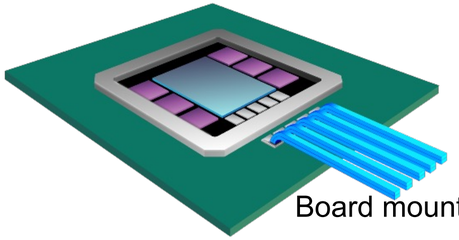
World's smallest and densest 1Tb/s optical chip

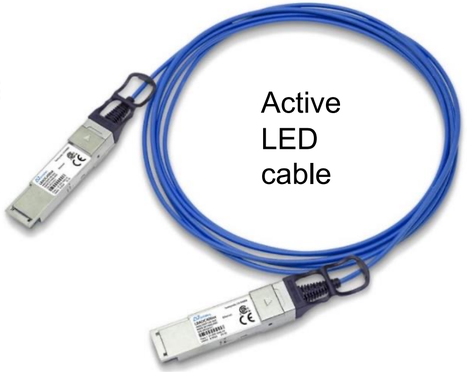




AOCs in established markets

- Already big market in Active Optical Cables
- Modules can also be board mounted
- Joint program with big customer
- Half the electrical power, much lower cos
  Enables AI architecture
- Will deliver product in 2025, ramp '26





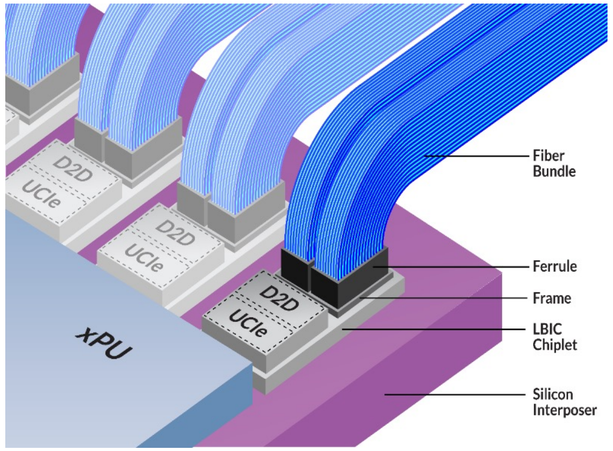
Co-packaged optics

Dramatically reduces electrical power and increases IO density

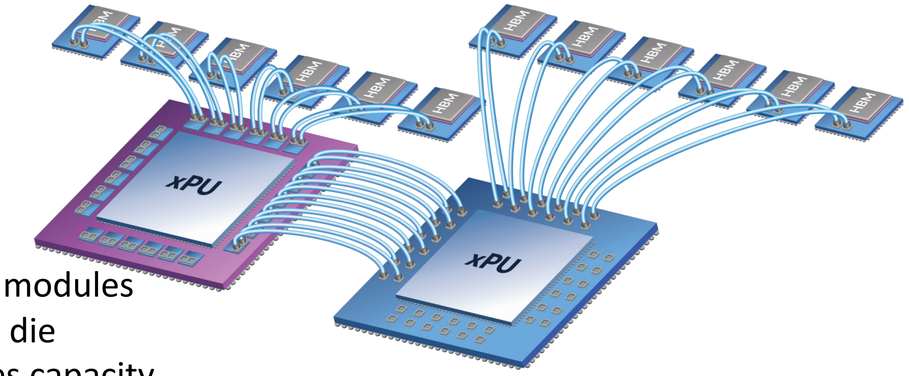
Extends a 2mm electrical interface to 10m

Multiple tier-1 companies engaged – product release in 2026

Ultimately, can be integrated on ASICs or memory directly



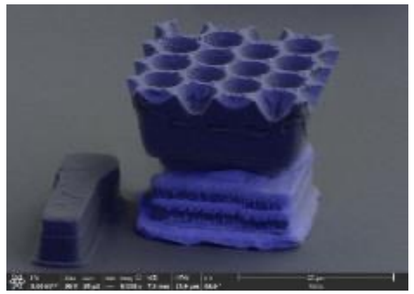
Memory interface

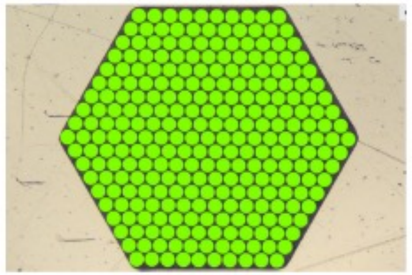


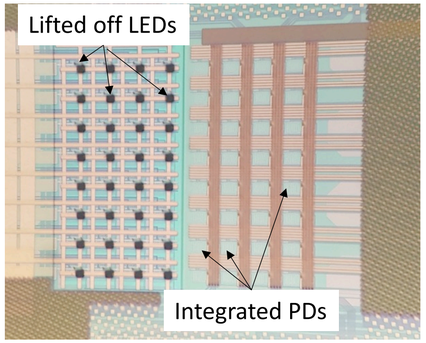
- Interface to memory modules
- Can put in HBM base die
- Dramatically increases capacity
- Cooler more reliable environment
- Avoids huge stacks
- All big three memory companies engaged / invested

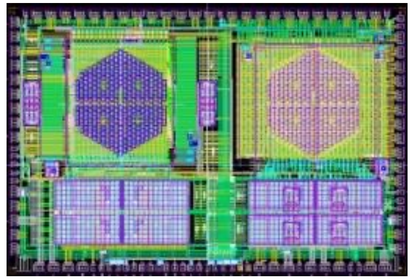
Almost every advanced chip is I/O limited. Huge potential impact

Brief Company History

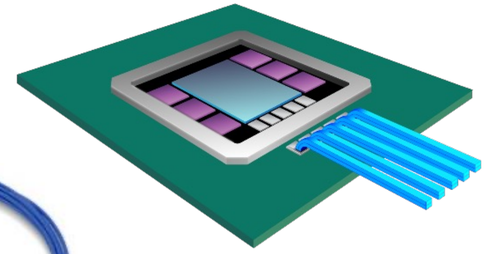












2019

Seed Round:

- Clear Ventures
- Samsung Catalyst

2020

Technology Development:

- GaN uLEDs
- Si PD
- Fiber Bundles

2021

Proof of Concept:

- 1st CMOS ASIC
- Transferred GaN microLEDs
- Integrated Si PDs

2022

Series A Funding Acquisition of Nanosys GaN Fab

- 2nd gen CMOS ASIC design
- Internal EPI reactor & LED transfer facility

2023/4

Prototype Development

- 16nm TSMC 1Tb/s chip
- Osram manufacturing
- AOC partner
- AI cluster COBO opportunity

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