

**[KOLIS x K-BioX 2026 - AI-Bio Symposium] From
AlphaFold to Agentic AI - Technology Breakthroughs,
Market Forces, and Strategic Thinking for the Next
Decade**

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About Speaker

- *Co-Founder & CTO @ Erudio Bio, Inc., San Jose & Novato, CA, USA* 2023 ~
- *Co-Founder & CEO @ Erudio Bio Korea, Inc., Korea* 2025 ~
- *Co-Founder, Leader, and Chair of Silicon Valley AI Nexus, USA* 2024 ~
- *CGO / Global Managing Partner @ LULUMEDIC, Seoul, Korea* 2025 ~
- *AI-Korean Medicine Integration Initiative Task Force Member @ The Association of Korean Medicine, Seoul, Korea* 2025 ~
- *Advisor to Korean American Semiconductor Professional Alliance (KASPA)* 2026 ~
- *KFAS-Salzburg Global Leadership Fellow @ Salzburg Global Seminar, Austria* 2024 ~
- *Adjunct Professor, EE Department @ Sogang University, Seoul, Korea* 2020 ~
- *Advisory Professor, EECS Department @ DGIST, Korea* 2020 ~
- Global Advisory Board Member @ Innovative Future Brain-Inspired Intelligence System Semiconductor of Sogang University, Korea 2020 ~
- Technology Consultant @ Gerson Lehrman Group (GLG), NY, USA 2022 ~

- Co-Founder & CTO / Head of Global R&D / Chief Applied Scientist / Senior Fellow @ Gauss Labs, Inc., Palo Alto, CA, USA 2020 ~ 2023
- VP / Fellow @ SK hynix 2020 ~ 2021
- Senior Applied Scientist @ Amazon.com, Inc., Vancouver, BC, Canada 2017 ~ 2020
- Principal Engineer @ Software R&D Center, Samsung Electronics 2016 ~ 2017
- Principal Engineer @ Strategic Marketing & Sales, Samsung Electronics 2015 ~ 2016
- Principal Engineer @ DT Team, DRAM Dev, Samsung Electronics 2012 ~ 2015
- Senior Engineer @ CAE Team, Memory Business, Samsung Electronics 2005 ~ 2012
- PhD - Electrical Engineering @ Stanford University, CA, USA 2001 ~ 2004
- Development Engineer @ Voyan, Santa Clara, CA, USA 2000 ~ 2001
- MS - Electrical Engineering @ Stanford University, CA, USA 1998 ~ 1999
- BS - Electrical & Computer Engineering @ Seoul National University 1994 ~ 1998

Highlight of Career Journey

- BS in Electrical Engineering (EE) @ Seoul National University
- MS & PhD in Electronics Engineering (EE) @ Stanford University
 - *Convex Optimization - Theory, Algorithms & Software*
 - Advisor - *Prof. Stephen P. Boyd*
- Principal Engineer @ Samsung Semiconductor, Inc.
 - *AI & Convex Optimization*
 - collaboration with *DRAM/NAND Design/Manufacturing/Test Teams*
- Senior Applied Scientist @ Amazon.com, Inc.
 - *e-Commerce AIs* - anomaly detection, deep RL, and recommender system
 - *Jeff Bezos's project - drove \$200M* in sales via Amazon Mobile Shopping App
- *Co-Founder & CTO / Global R&D Head & Chief Applied Scientist* @ Gauss Labs, Inc.
- *Co-Founder & CTO* @ Erudio Bio, Inc.
- *Co-Founder & CEO* @ Erudio Bio Korea, Inc.

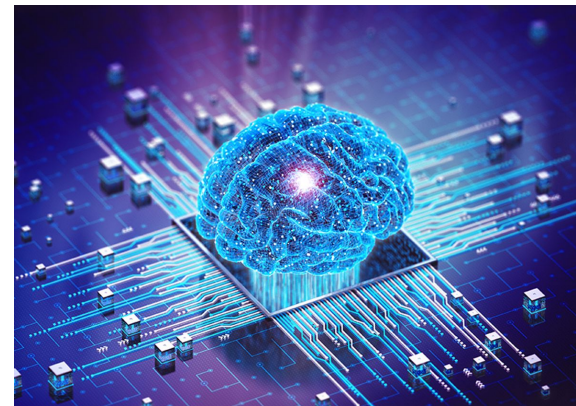
Unpacking AI-Bio-Medical Landscape

- AI and Biotech - 5
 - AI in biology & AlphaFold 3
 - Emerging Trends in Biotech
- Erudio Bio US / Erudio Bio Korea - 24
 - Powering AI-driven medicine with ground-truth binding data
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AI & Biotech

AI in biology

- AI has been used in biological sciences, and science in general
- AI's ability to process large amounts of raw, unstructured data (*e.g.*, DNA sequence data)
 - reduces time and cost to conduct experiments in biology
 - enables others types of experiments that previously were unattainable
 - contributes to broader field of engineering biology or biotechnology
- AI increases human ability to make direct changes at cellular level and create novel genetic material (*e.g.*, DNA and RNA) to obtain specific functions



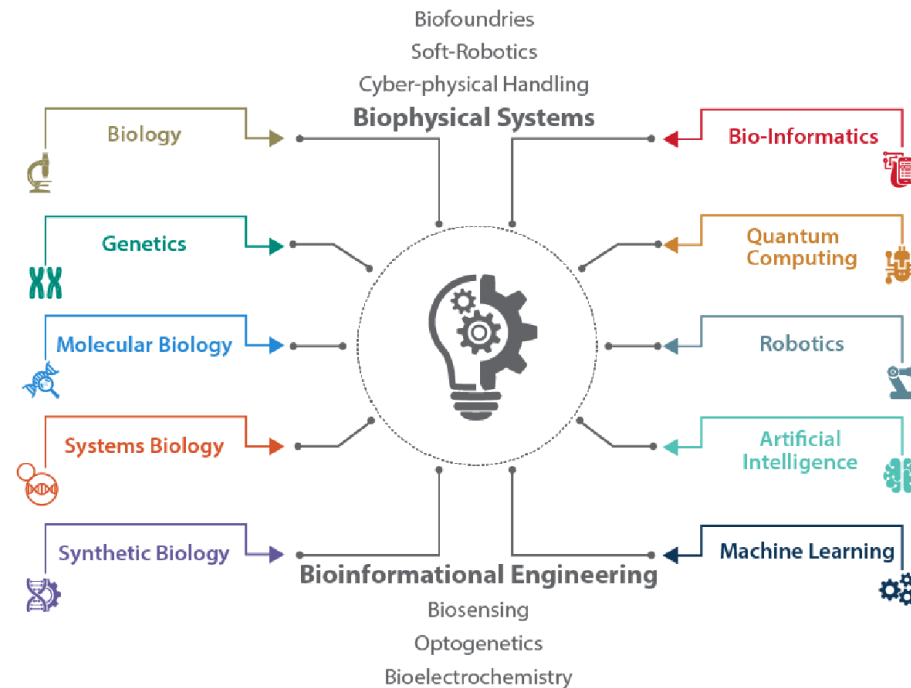
Biotech

Biotech

- biotechnology
 - is multidisciplinary field leveraging broad set of sciences and technologies
 - relies on and builds upon advances in other fields such as nanotechnology & robotics, and, increasingly, AI
 - enables researchers to read and write DNA
 - sequencing technologies “read” DNA while gene synthesis technologies take sequence data and “write” DNA turning data into physical material
- 2018 National Defense Strategy & Senior US Defense and Intelligence Officials identified emerging technologies that could have disruptive impact on US national security [[Say21](#)]
 - [AI](#), lethal autonomous weapons, hypersonic weapons, directed energy weapons, [biotechnology](#), quantum technology
- other names for biotechnology are engineering biology, synthetic biology, biological science (when discussed in context of AI)

Biotech - multidisciplinary field

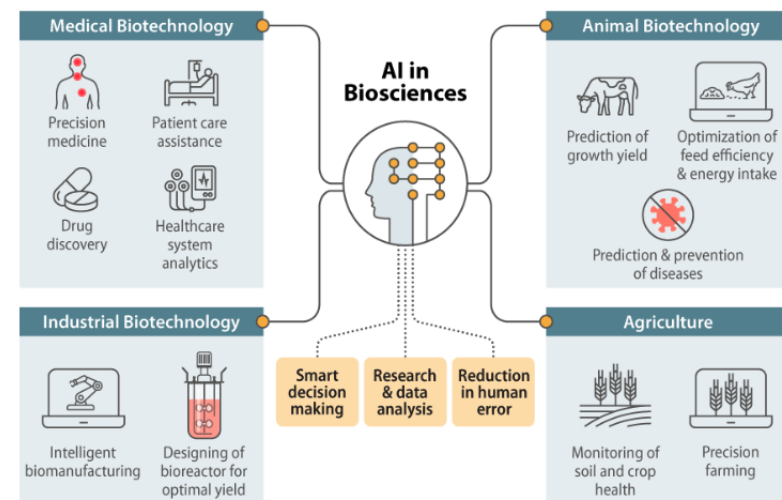
- sciences and technologies enabling biotechnology include (but not limited to)
 - (molecular) biology, genetics, systems biology, synthetic biology, bio-informatics, quantum computing, robotics [DFJ22]



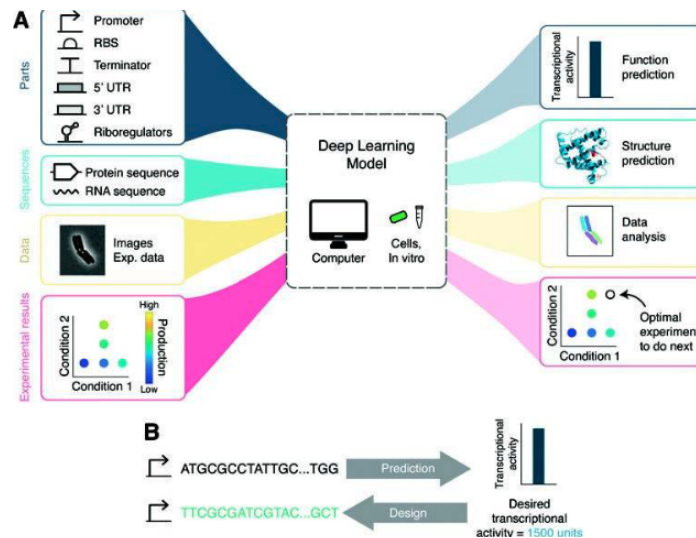
Convergence of AI and biological design

- AI & biological sciences converging [BKP22]
 - each building upon the other's capabilities for new research and development across multiple areas
- Demis Hassabis, CEO & cofounder of DeepMind, said of biology [Toe23]

“... biology can be thought of as information processing system, albeit extraordinarily complex and dynamic one ... just as mathematics turned out to be the right description language for physics, biology may turn out to be *the perfect type of regime for the application of AI!*”
- both AI & biotech rely on and build upon advances in other scientific disciplines and technology fields, such as nanotechnology, robotics, and increasingly big data (*e.g.*, genetic sequence data)
 - each of these fields itself convergence of multiple sciences and technologies
- so *their impacts can combine to create new capabilities*



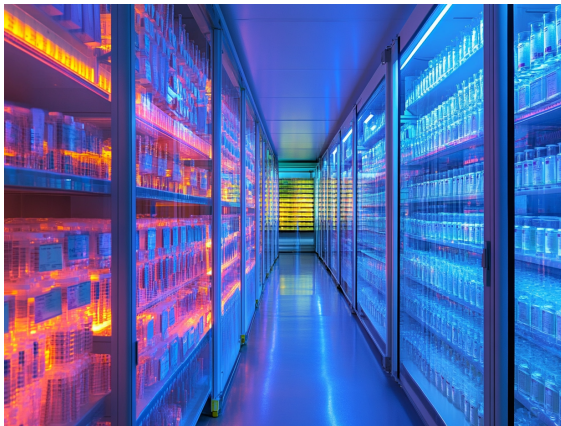
Multi-source genetic sequence data



- AI, essential to analyzing exponential growth of genetic sequence data
 - “AI will be essential to fully understanding how genetic code interacts with biological processes” - US National Security Commission on Artificial Intelligence (NSCAI)
 - process huge amounts of biological data, *e.g.*, genetic sequence data, coming from different biological sources for understanding complex biological systems
 - sequence data, molecular structure data, image data, time-series, omics data
- *e.g.*, analyze genomic data sets to determine the genetic basis of particular trait and potentially uncover genetic markers linked with that trait

Quality & quantity of biological data

- limiting factor, however, is *quality and quantity* of biological data, *e.g.*, DNA sequences, that AI is trained on
 - *e.g.*, accurate identification of particular species based on DNA requires reference sequences of *sufficient quality* to exist and be available
- databases have varying standards - access, type, and quality of information
- design, management, quality standards, and data protocols for reference databases can affect utility of particular DNA sequence



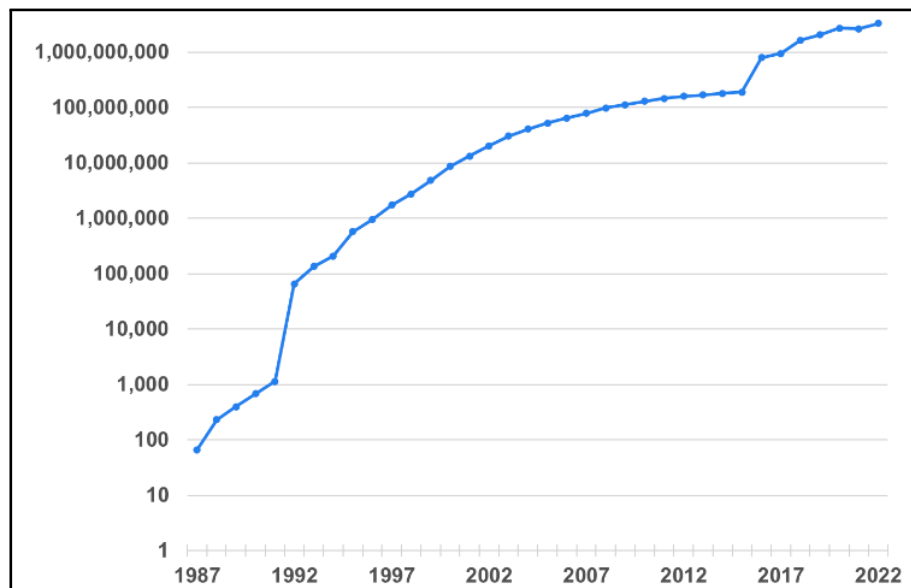
Rapid growth of biological data

- volume of genetic sequence data grown exponentially as sequencing technology evolved
- more than 1,700 databases incorporating data on genomics, protein sequences, protein structures, plants, metabolic pathways, *etc.*, *e.g.*
 - open-source public database
 - Protein Data Bank, US-funded data center - more than *terabyte of three-dimensional structure data* for biological molecules, *e.g.*, proteins, DNA, RNA
 - proprietary database
 - Gingko Bioworks - more than *2B protein sequences*
 - public research groups
 - Broad Institute - produces roughly *500 terabases of genomic data per month*
- great potential value in aggregate volume of genetic datasets that can be collectively mined to discover and characterize relationships among genes

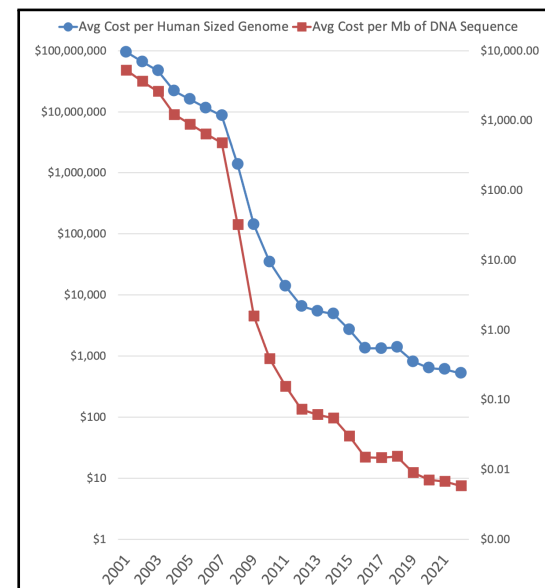
Volume and sequencing cost of DNA over time

- volume of DNA sequences & DNA sequencing cost
 - data source: National Human Genome Research Institute (NHGRI) [Wet23] & International Nucleotide Sequence Database Collaboration (INSDC)
- *more dramatic than Moore's law!*

sequences in INSDC



DNA sequencing cost



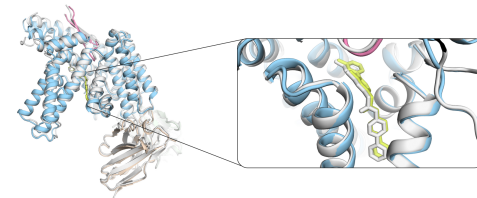
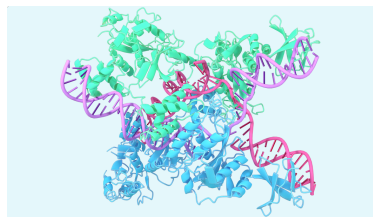
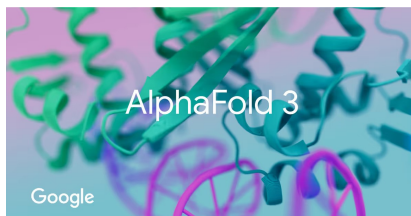
Bio data availability and bias

- US National Security Commission on Artificial Intelligence (NSCAI) recommends
 - US fund and prioritize development of a biobank containing *“wide range of high-quality biological and genetic data sets securely accessible by researchers”*
 - establishment of database of broad range of human, animal, and plant genomes would
 - *enhance and democratize biotechnology innovations*
 - *facilitate new levels of AI-enabled analysis of genetic data*
- bias - availability of genetic data & decisions about selection of genetic data can introduce bias, *e.g.*
 - training AI model on datasets emphasizing or omitting certain genetic traits can affect how information is used and types of applications developed - *potentially privileging or disadvantaging certain populations*
 - access to data and to AI models themselves may impact communities of differing socioeconomic status or other factors unequally

Emerging Trends in Biotech

AlphaFold

- solving 50-year-old protein folding problem, *“one of biology’s grand challenges”*
 - definition - given amino acid sequence, predict how it folds into a 3D structure
 - proteins fold in microseconds, but predicting computationally nearly impossible
- AlphaFold 1 (2018) - DL + physics-based energy functions → AlphaFold 2 (2020)
 - attention-based NN solving protein folding “in principle” → AlphaFold 3 (2024) - diffusion-based DL, drug-protein interactions, protein complexes
- AlphaFold protein structure database
 - >200MM protein structures - nearly every known protein, used by >2MM researchers
- Applications & implications
 - drug discovery - target identification, lead optimization, side effect prediction
 - enzyme engineering, agriculture, environmental, vaccine development



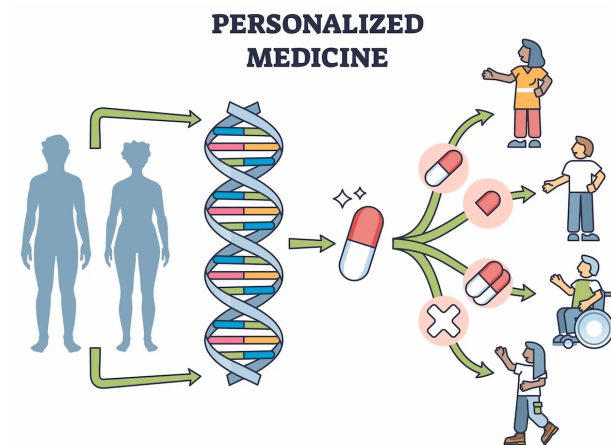
AlphaGo

- Go board marked with 19×19 grid - $(19 \times 19)! = 361! \approx 1.44 \times 10^{768}$
- deep reinforcement learning with Monte Carlo tree search
 - trained on thousands of years of Go game history
 - AlphaGo Zero learns by playing against itself
- development experience, insight, knowledge, know-how transferred to AlphaFold

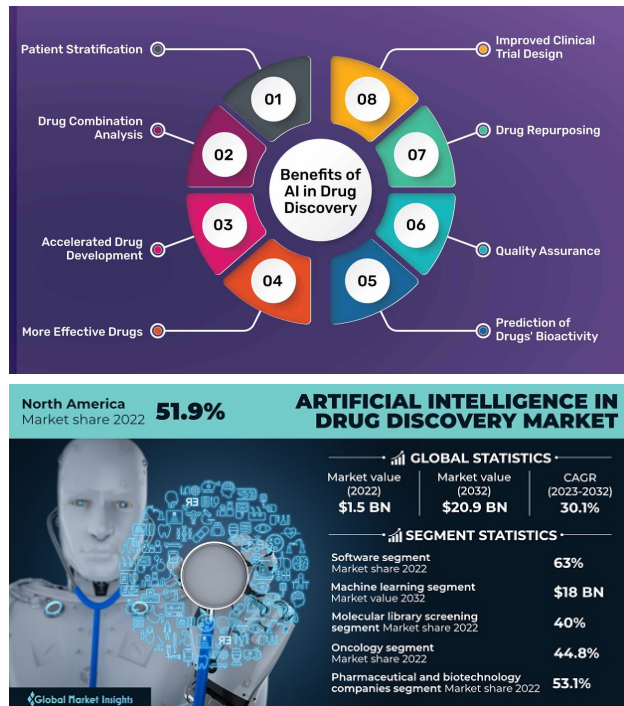


Personalized medicine

- *shift from one-size-fits-all approach to tailored treatments*
- based on individual genetic profiles, lifestyles & environments
- AI enables analysis of vast data to predict patient responses to treatments, thus enhancing efficacy and reducing adverse effects
- *e.g.*
 - custom cancer therapies
 - personalized treatment plans for rare diseases
 - precision pharmacogenomics
- companies - Tempus, Foundation Medicine, *etc.*



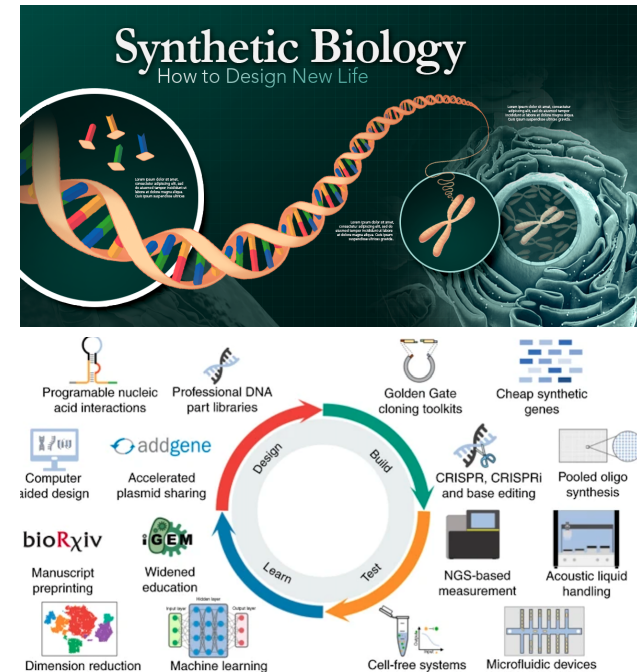
AI-driven drug discovery



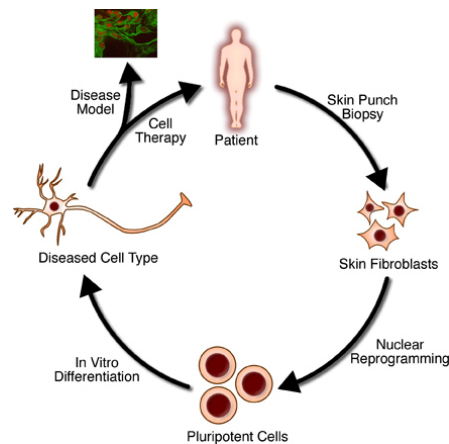
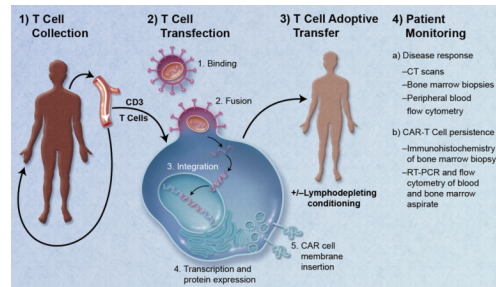
- traditional drug discovery process - time-consuming and costly often taking decades and billions of dollars
- AI streamlines this process by predicting the efficacy and safety of potential compounds with more speed and accuracy
- AI models analyze chemical databases to identify new drug candidates or repurpose existing drugs for new therapeutic uses
- companies - Insilco Medicine, Atomwise.

Synthetic biology

- use AI for gene editing, biomaterial production and synthetic pathways
- combine principles of biology and engineering to design and construct new biological entities
- AI optimizes synthetic biology processes from designing genetic circuits to scaling up production
- company - Ginkgo Bioworks uses AI to design custom microorganisms for applications ranging from pharmaceuticals to industrial chemicals



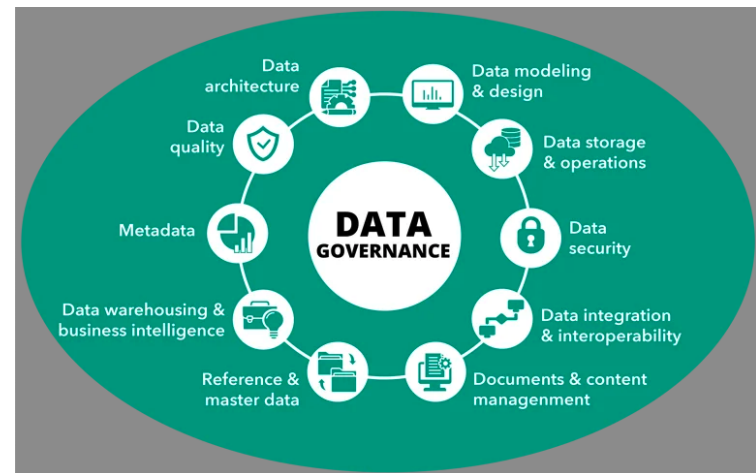
Regenerative medicine



- AI advances development of stem cell therapies & tissue engineering
- AI algorithms assist in identifying optimal cell types, predicting cell behavior & personalized treatments
- particularly for conditions such as neurodegenerative diseases, heart failure and orthopedic injuries
- company - Organovo leverages AI to potentially improve the efficacy and scalability of regenerative therapies, developing next-generation treatments

Bio data integration

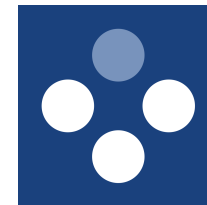
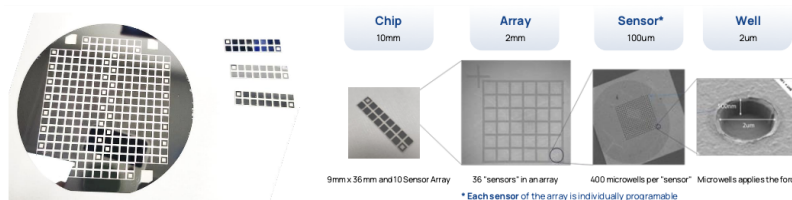
- integration of disparate data sources, including genomic, proteomic & clinical data - one of biggest challenges in biotech & healthcare
- AI delivers meaningful insights *only when* seamless data integration and interoperability realized
- developing platforms facilitating comprehensive, longitudinal patient data analysis - vital enablers of AI in biotech
- company - Flatiron Health working on integrating diverse datasets to provide holistic view of patient health



Erudio Bio

Powering AI-driven medicine with ground-truth binding data

- problems we solve
 - 90% of drugs fail in clinical trials due to poor early-stage prediction
 - multiplexed diagnostics suffer from false positives and cross-reactivity
- *Erudio Bio's Innovation*
 - *VSA* platform uses patented “*dynamic force spectroscopy*” to generate 1000x more high-quality binding data from single sample ($\sim 10\mu\text{L}$)
 - measuring not just presence, but *strength* and *kinetics* of molecular interactions
- *dual business model*
 - diagnostics - *multi-cancer biomarker detection* with clinical institutions & hospitals
 - *drug discovery - bioTCADTM platform* providing ground-truth labels to train & validate pharma AI models, reducing preclinical cycles



Validated technology, proven team, clear path to market

- validated impact
 - *\$1M Gates Foundation Grant* (2025) to democratize drug development for global health
 - partnerships with top research institutions (KRIBB, KAIST)
- unique team - *Stanford-trained founders* combining
 - semiconductor TCAD expertise & force spectroscopy innovation (20+ years)
 - AI & optimization leadership (Samsung, Amazon, SK hynix, Gauss Labs)
- market entry
 - *Korea → (Asia hub &) US* strategy with 2026 regulatory milestones
 - expanding *pharma partnerships and B2G*

Gates Foundation



Biological Assays Struggle with Scale & Accuracy

Data is expensive

- so we make decisions with *incomplete* picture
- status quo
 - limited, small-scale testing confirms diagnosis
 - outcome only as good as doctor's ability to determine which tests, limiting the picture
 - cross reactivity prevents larger scale testing
- Erudio creates
 - *comprehensive, large-scale* testing will drive diagnosis without assumptions
 - increased scale enables enhanced scientific discovery leading to
 - *better patient care*
 - *reduced time to diagnosis*
 - *cost reduction*



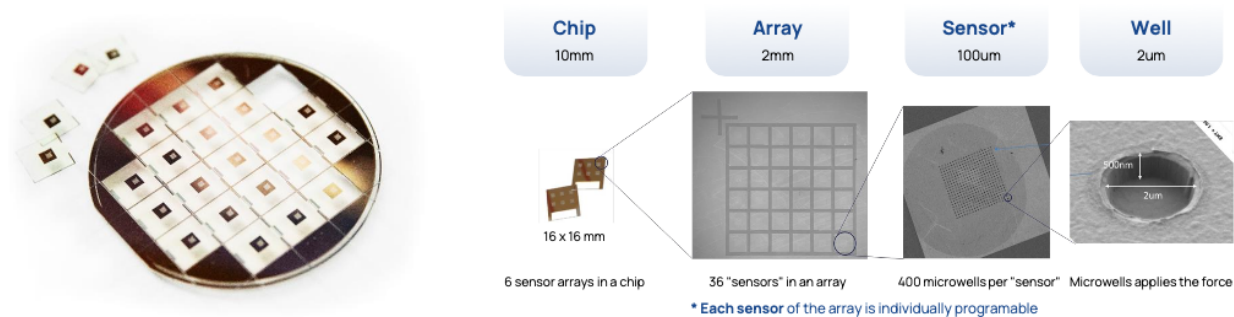
Erudio Bio starts revolution with Gates Foundation's support

- more data
 - comprehensive data from *single biological sample*
 - *multiplexed analysis* of nucleic acid, protein, cells, and more!
 - *multi-omic platform*
- actionable data
 - combined quality score from all data sources for comprehensive & conclusive assessment
- earlier data
 - complete data early to drive accurate decision making



Versatile Smart Assay (VSA) Platform

VSA technology



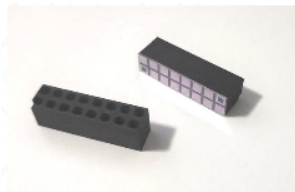
- generates *1000x more data* than the prevailing technology
 - scalable multi-omic microarray sensor
- *21 patents* in US, Canada, EU, and China
- indicates how good the data is in real time
 - patented “dynamic force spectroscopy” and “powerful Bayesian inference” method provides our data *quality score* to know their accuracy for actionable data
- AI software extracts a detailed, interpretable picture for quick diagnosis
 - leads to *AI knowledge discovery* resulting in *data-driven diagnosis*

Enabling comprehensive data acquisition

- antibodies - versatile tools in biology
 - can engineer to target virtually *anything* we want
 - problem
 - indiscriminate interactions severely limits use of antibodies – *cross-reactivity*
 - error-prone results due to *non-specific binding*
- solution - comprehensive data with *dynamic force spectroscopy*
 - comprehensive binding strength to distinguish specific from non-specific binding
 - *quality score* discerns noise from useful data to enable multiplexing



VSA's business models



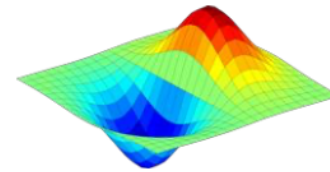
Consumable chip
& flowcell



Instrument



Consumable
reagent kit



Software
AI/ML & SaaS

- VSA platform
 - instrument - recurring revenue with high margin
 - modular licensable software - AI based data interpretation and feature extraction
- SaaS
 - subscription based pre-validation of reagent database
 - AI feature extraction and knowledge discovery

When Erudio's VSA meets AI - Gates Foundation Grant

Erudio Bio wins \$1M Gates Foundation Grant - scaling bioTCAD

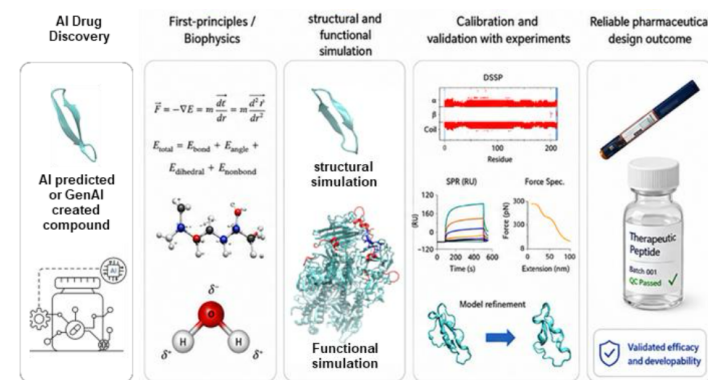
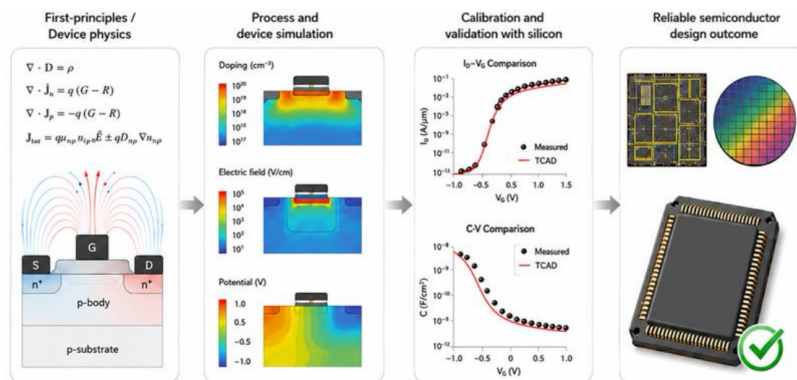
Gates Foundation



- *\$1M Grant Award (2025)*
 - Gates Foundation recognizes Erudio Bio's potential to transform drug development for global health
- mission alignment - democratizing medicine by making preclinical drug design faster, yet reliable & accessible
 - lowering development costs for diseases affecting LMICs
 - addressing the 90% clinical trial failure rate that drives up drug costs
- funded project - develop *bioTCADTM platform for lead optimization of drug discovery*
 - expand force spectroscopy measurements across high-burden disease targets
 - train AI models with kinetics-resolved binding data (on/off rates, unbinding forces)
 - *enable pharma/biotech to prioritize candidates earlier with higher confidence*

bioTCAD - hybrid AI & physics-based drug development

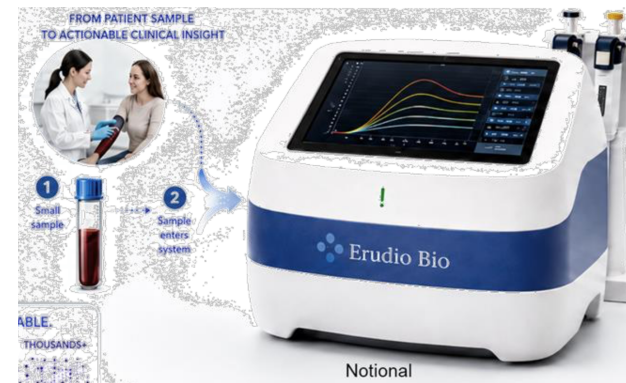
- (old school) AI/ML excels at pattern recognition across large chemical libraries
 - identifying candidate hits at scale – valuable role established and growing
- AI alone *cannot reliably explain binding physics or predict behavior in unexplored and novel chemical space* – *capability and credibility gap*
- bioTCAD combines *AI and measurement-backed, physics-grounded simulation*
- applies *the* principle that made semiconductor TCAD trustworthy
 - validate model parameters to YOUR experimental measurements to be reliably right



Erudio Bio's Business Models

Erudio Bio Applications

- drug development
- clinical diagnostic
 - medicine is already 20% of the world's economy and growing at 5% per year
- biodefense
 - GWOT to great power competition
 - need to defend against near-peer adversaries
 - flexible, efficient solution needed from CBRND to readiness



Teams

Team & advisory board

- team
 - Kee-Hyun Paik, Ph.D. (CEO) - chip, microfluidics, instrumentation
 - Sunghee Yun, Ph.D. (CTO) - AI, optimization, business development, software
 - Susanne Baumhueter, Ph.D. - biology, immunology, project management
- advisory board
 - Michael Cola - CEO of AEVI Genomic Medicine (\$62B sales to Takeda)
 - Tim Germann - CCO of Carterra Bio
 - Karyn Eliot - retired CIA Sr. Executive
 - Phil Ferro - virologist, formerly DoD, DoS, HHS and White house
 - Bill Chen - Former hedge fund and VC professional with national security, FFRDC
 - Ronald W. Davis - Director of Stanford Genome Tech Center (\$15B+ exits)
 - Michael Snyder - Prof. Genetics, Dir. Stanford Human Genome Center
 - William J. Greenleaf - Prof. Genetics and Applied Physics, Stanford University



Sunghee Yun

Jul 11, 2026

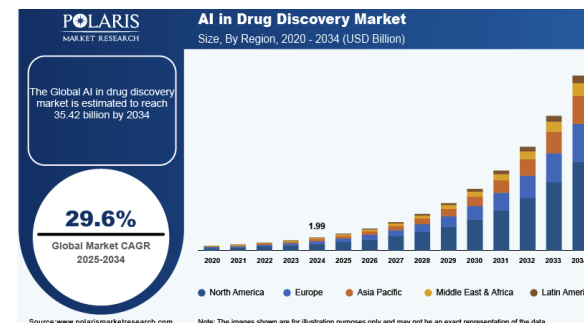
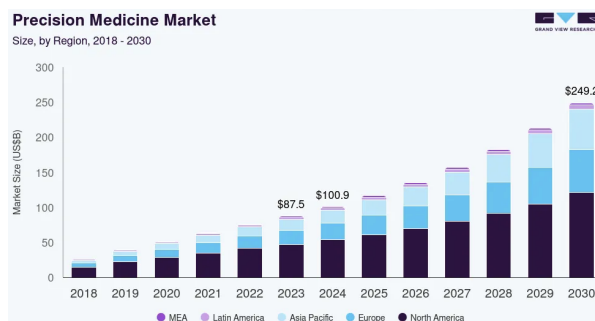


The Trillion Dollar Opportunities

The Moment - Why Now & Why it's Big?

The market is real - and enormous

- AI in biotech/pharma market size
 - AI in drug discovery - \$4B (2023) → \$50B+ by 2034 (Global Market Insights)
 - AI diagnostics market - \$1.2B (2023) → \$5-12B by 2030
 - precision/personalized medicine - \$80B (2023) → \$230B by 2030
 - synthetic biology - \$15B (2023) → \$100B by 2032
 - *combined TAM approaching \$1T by mid-2030s* - conservative estimate
- why biotech AI multiples exceed pure software AI
 - software AI competes on marginal cost → commoditizes fast
 - biotech AI - irreversible IP - novel molecules, validated biomarkers, proprietary assay
 - every successful clinical trial is a data moat that cannot be reverse-engineered

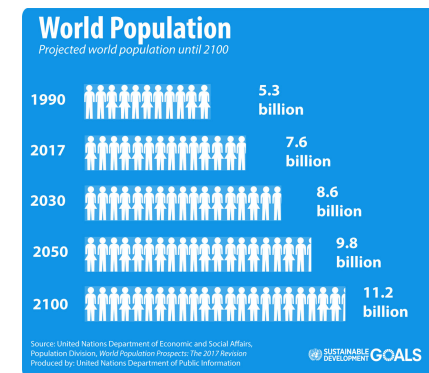


Macro tailwinds amplifying these opportunities

- aging global population - over 2.1 billion people over 60 by 2050 (UN DESA)
 - cancer, neurodegeneration, cardiovascular disease scale accordingly
- post-COVID regulatory acceleration
 - FDA's AI/ML action plan, EMA adaptive pathways
- government prioritization - US CHIPS & Science Act includes biotech
 - Gates Foundation, NIH, BARDA deploying billions in non-dilutive capital
- historical parallel
 - genomics wave (Human Genome Project) unlocked \$1T in economic value
 - *AI-biotech convergence is at least one order of magnitude larger*



Gates
Foundation



Three exponential curves converging now

- *curve 1 - LLMs & genAI*
 - language models operating natively on biological “languages” - protein sequences (ESM-2, ESMFold), SMILES molecular notation, genomic sequences
 - generative AI can propose novel drug candidates - Insilico Medicine’s INS018_055 went from AI-generated candidate to Phase II in 4 years vs industry avg of 10–15 yrs
 - multi-modal AI integrating imaging, omics, and clinical notes simultaneously
- *curve 2 - biochemical & biological breakthroughs*
 - AlphaFold 3 (2024) - extends beyond proteins to DNA, RNA, small molecules, and their interactions — the full drug-target interface
- *curve 3 - data availability*
 - DNA sequencing cost reduction, INSDC database, electronic health records digitized, wearables & continuous monitoring
- *The rarity of this moment - all three curves peaking simultaneously is historically unprecedented*

The Moat - What separates a Winner from Hype?

Cross-domain inevitabilities - The Technical Moat

- core insight
 - *fundamental mathematical structures recur across seemingly unrelated domains*
 - recognizing these - strategic advantage - optimization → biological energy landscapes
 - protein folding is fundamentally an energy minimization problem over high-dimensional conformational space
- information theory → cellular signaling
 - mutual information and channel capacity concepts (Shannon, 1948) map directly onto how cells encode and transmit signals through biochemical cascades
 - LLM training optimizes cross-entropy loss over token distributions
 - cellular gene regulatory networks optimize analogous information-theoretic objectives over transcription factor binding distributions
 - *researchers who understand why transformers work can transfer those architectural intuitions to biological sequence modeling*

What separates Unicorn Potential from incremental progress

- *dimension 1 - platform vs point solution*
 - point solution - AI model predicting one biomarker for one cancer type - narrow addressable market & low defensibility
 - *platform* - technology applicable across multiple disease areas, multiple biomarker classes, multiple assay modalities — TAM compounds with each new application
 - litmus test - “Can this technology be redirected to new disease areas in a few months without rebuilding from scratch?”
- *dimension 2 - is AI load-bearing or decorative?*
 - “AI-washing” - ML used for marketing positioning, not scientific differentiation
 - *load-bearing AI* - the AI component creates a result impossible or uneconomic to achieve otherwise
 - *e.g.*, Erudio Bio’s dynamic force spectroscopy + AI detecting cancer biomarkers at concentrations below conventional immunoassay thresholds

- *dimension 3 - pathway to clinical and regulatory reality*
 - computational elegance that cannot survive contact with clinical data is worthless
 - regulatory strategy must be designed into product from day one - not retrofitted after technical development
 - FDA's 510(k) vs De Novo vs PMA pathways have entirely different clinical evidence requirements — choice of pathway is a strategic decision made at founding
 - *hospital partnerships (e.g., SNUBH, Kyemyung Univ Dongsan Hospital) not just validation - they are the pipeline for clinically grounded training data!*
- *dimension 4 - proprietary data moat*
 - the most durable competitive advantage in AI-biotech is *the data no one else can access or replicate*
 - e.g., proprietary assay platforms generating novel measurement types, exclusive hospital partnerships, patient cohorts with longitudinal follow-up, rare disease registries
- *dimension 5 - human welfare at the center; not a constraint, but a strategic asset!*
 - mission alignment with patient outcomes unlocks - NIH/Gates/BARDA non-dilutive funding, academic medical center partnerships, favorable regulatory posture, and - increasingly - LP mandates in impact-oriented VC funds

Investment landscape & white spaces

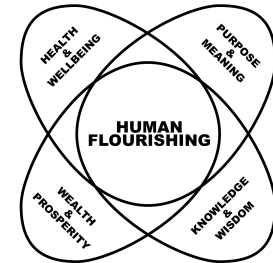
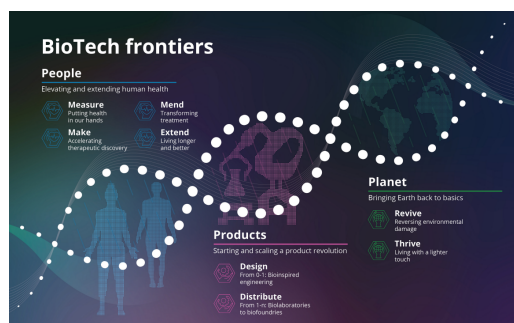
- where capital is concentrating - crowded but justified
 - *AI-native drug discovery platforms* - Insilico Medicine, Recursion Pharmaceuticals, Exscientia, Schrödinger - well-capitalized, public or late-stage
 - *protein engineering and design* - Absci, Generate Biomedicines, Cradle - foundation model approach to antibody and enzyme design
 - genomics interpretation - large language models trained on genomic sequences (Evo, Nucleotide Transformer)
 - risk - these spaces are getting crowded - differentiation increasingly difficult, capital efficiency under pressure
- underinvested white spaces - higher risk-adjusted opportunity
 - *AI-native diagnostic assays* - most diagnostic AI is retrofitted onto existing assay platforms - companies building AI-first measurement modalities have structural advantages in sensitivity, cost, and data proprietary
 - AI for *rare and neglected diseases* - Gates Foundation, Wellcome Trust, BARDA actively funding — orphan drug designation provides 7-year market exclusivity, priority review vouchers worth \$100M+ on the market

- *non-dilutive capital as validation signal*
 - Gates Foundation grants signal scientific credibility to commercial investors - functions as third-party technical due diligence
 - NIH SBIR/STTR - up to \$2M non-dilutive with right of first refusal waiver - massively underutilized by Silicon Valley founders
 - BARDA contracts for pandemic preparedness and biodefense - recurring revenue, not grant-dependent
- *timing - why now is the moat-formation window*
 - infrastructure (cloud genomics, foundation biology models, spatial omics platforms) just reached the point where startups can access capabilities that required a Broad Institute or Genentech five years ago
 - first-mover advantage in proprietary data accumulation compounds - every patient sample run through a novel assay platform strengthens the moat
 - *2025—2028 window* - analogous to 2008—2012 in cloud infrastructure - the companies founded now with the right platform architecture will be structurally dominant by 2030

The Maker - Who this Moment Demands?

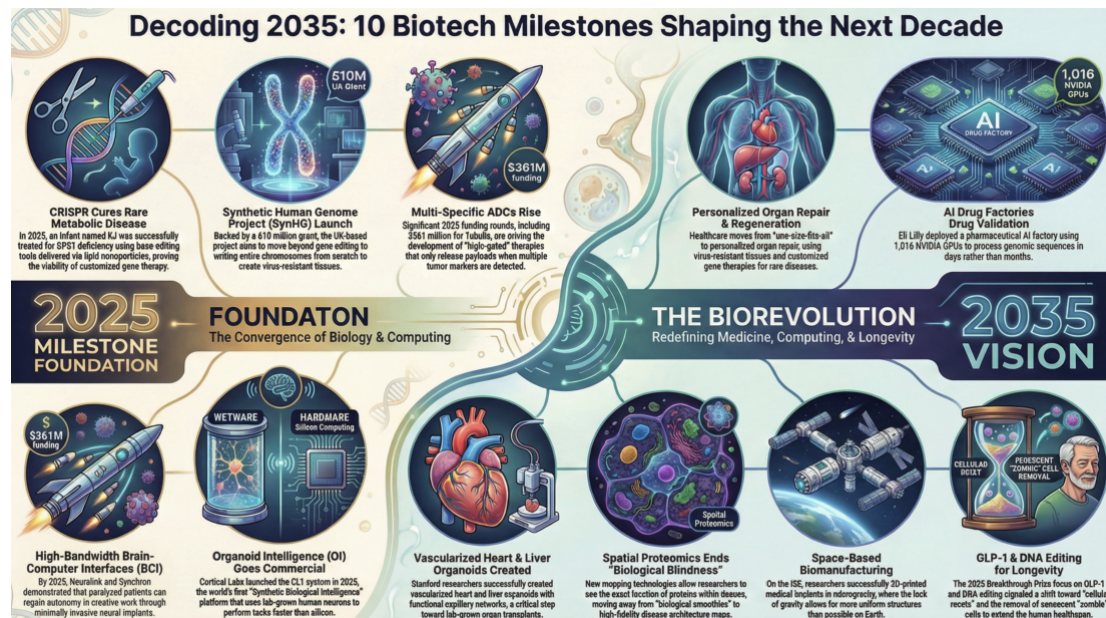
The Rare Entrepreneur This Moment Demands

- three simultaneous operating modes – all required
 - *deep technologist* - must understand inner workings well enough to know what AI can and cannot do & *spot when a competitor's technical claim is hollow*
 - *business strategist* - must navigate regulatory complexity, reimbursement strategy, partnership structuring, and capital allocation under uncertainty simultaneously
 - *advocate for human flourishing* - must hold *patient outcome as the north star* – not as marketing message, but as decision criterion resolving conflicts between speed, cost, and scientific rigor



What the audience in this room should take away

- *the convergence is real, the market is massive, and the technical foundations are now mature enough to build on*
- the scarcest resource is not capital, nor compute, nor biological data – it is *founders holding the full stack - theory, biology, engineering, clinical reality, and human purpose*
- *companies that will define human health in 2035 being founded in the next 24 months!!*



Selected References & Sources

Selected references & sources

- Robert H. Kane “Quest for Meaning: Values, Ethics, and the Modern Experience” 2013
- Michael J. Sandel “Justice: What’s the Right Thing to Do?” 2009
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- Yuval Noah Harari “Sapiens: A Brief History of Humankind” 2014
- M. Shanahan “Talking About Large Language Models” 2022
- A.Y. Halevry, P. Norvig, and F. Pereira “Unreasonable Effectiveness of Data” 2009
- A. Vaswani, et al. “Attention is all you need” @ NeurIPS 2017
- S. Yin, et. al. “A Survey on Multimodal LLMs” 2023
- Chris Miller “Chip War: The Fight for the World’s Most Critical Technology” 2022
- CEOs, CTOs, CFOs, COOs, CMOs & CCOs @ startup companies in Silicon Valley
- VCs on Sand Hill Road - Palo Alto, Menlo Park, Woodside in California, USA

References

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Thank You