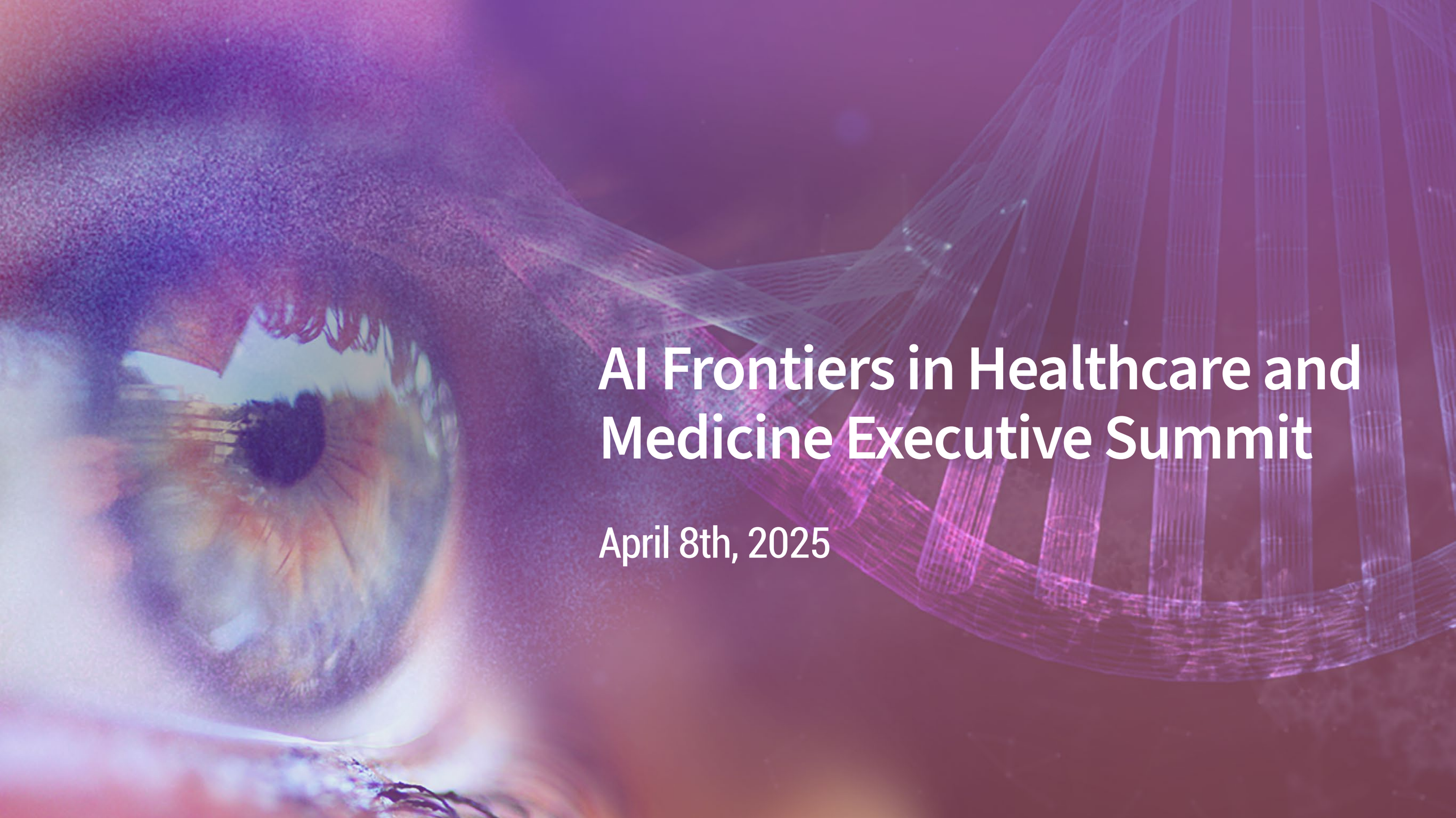


# AI Frontiers in Healthcare and Medicine Executive Summit

April 8th, 2025

WELCOME NOTE

# The Future is Now

The first Executive AI Summit on AI in Healthcare and Medicine was an important moment in the journey to precision health and medicine. The summit was held by Stanford's Biomedical Data Science Department and Accenture. It brought together leaders from academia, biopharma, technology, consulting and healthcare delivery to discuss the great potential and necessary safety measures that define the rapidly changing AI healthcare landscape.

Across sessions, we saw the rise of **agentic AI systems** that can act autonomously yet transparently to support clinical decisions, research and patient care. We heard how synthetic data can be very helpful in making clinical trials more efficient, inclusive and privacy-preserving. This is especially true in rethinking traditional control arms. While multimodal data integration remains one of AI's greatest challenges, it also represents one of its boldest opportunities: to unite electronic health records, radiology, pathology, genomics and other data types into foundation models that reflect the full complexity of human health.

This e-book captures the insights and urgency of the summit. At the heart of the summit conversations was a shared understanding that the future of healthcare AI will be built through collaboration between different sectors. This will be done by focusing on trust, transparency and patient-centered outcomes. Attendees also had the opportunity to engage with short, high-impact product demos from emerging startups, offering a glimpse into the future of applied healthcare AI.

We think **you will agree** that the potential of AI in health and medicine is transformational, but the path forward is complex. We want you to explore the ideas in the next few pages. We also want you to stay connected with the growing group of leaders who are working together to make AI a trusted partner in building a healthier future for everyone.

**Let's keep building this future, together.**

Karthik Narain (Group Chief Executive, Technology and Chief Technology Officer, Accenture)

Sylvia Plevritis, (William M. Hume Professor in the School of Medicine, Professor of Biomedical Data Science and of Radiology and Chair of the Department of Biomedical Data Science at Stanford University)

Laetitia Cailleteau (Stanford Biomedical Data science COE Sponsor and Responsible AI Lead EMEA)

Karen Matthys (Executive Director, Department of Biomedical Data Science, Stanford)

View the full: **Welcome Talk**

# Table of contents

BIO

# Lloyd B. Minor

**Lloyd B. Minor**

Carl and Elizabeth Naumann Dean of the School of Medicine, Vice President for Medical Affairs, Stanford University, Professor of Otolaryngology - Head & Neck Surgery and, by courtesy, of Bioengineering and of Neurobiology

**Lloyd B. Minor, MD, is a scientist, surgeon and academic leader. He is the Carl and Elizabeth Naumann Dean of the Stanford University School of Medicine and Vice President for Medical Affairs at Stanford University. Dr. Minor also is a professor of Otolaryngology–Head and Neck Surgery and a professor of Bioengineering and of Neurobiology, by courtesy, at Stanford University.**

As dean, Dr. Minor has had an integral role in setting strategy for the clinical enterprise of Stanford Medicine, an academic medical center that includes the Stanford University School of Medicine, Stanford Health Care and Stanford Medicine Children's Health. With his leadership, Stanford Medicine leads the biomedical revolution in Precision Health. His book, "Discovering Precision Health," describes this shift to more preventive, personalized health care and highlights how biomedical advances are dramatically improving our ability to treat and cure complex diseases. In 2021, Dr. Minor articulated and began realizing a bold vision to transform the future of life sciences at Stanford University and beyond–a multi-decade journey enabled by Precision Health.

In August 2023, Dr. Minor was appointed Vice President for Medical Affairs to lead all matters related to health and medicine at Stanford University.

Before Stanford, Dr. Minor was provost and senior vice president for academic affairs of Johns Hopkins University.

Prior to this appointment in 2009, Dr. Minor served as the Andelot Professor and director (chair) of the Department of Otolaryngology–Head and Neck Surgery in the Johns Hopkins University School of Medicine and otolaryngologist-in-chief of The Johns Hopkins Hospital.

With more than 160 published articles and chapters, Dr. Minor is an expert in balance and inner ear disorders perhaps best known for discovering superior canal dehiscence syndrome, a debilitating disorder characterized sound or pressure-induced dizziness. He subsequently developed a surgical procedure that corrects the problem and alleviates symptoms.

In 2012, Dr. Minor was elected to the National Academy of Medicine.

SPEAKER LLOYD B. MINOR

# Leading the Future Together: Stanford and Accenture’s Vision for AI in Health and Education

**Introduction**

At a recent gathering that underscored the growing synergy between academia and industry, Stanford University's leadership reaffirmed its commitment to advancing artificial intelligence in healthcare and education. The collaboration with Accenture—highlighted during a conference cohosted by Stanford's Department of Biomedical Data Science and Accenture's technology team—is more than symbolic. It marks a deepening of ties between two institutions determined to shape the ethical and innovative trajectory of AI deployment.


The dean of Stanford's School of Medicine opened by thanking the conference organizers and acknowledging the shared effort behind this strategic convening. With a nod to the ongoing projects between Stanford faculty and Accenture, he emphasized the importance of these alliances not just in technological progress, but in responsible leadership.

**Early Days of a Transformative Era**

He reflected on the transformative possibilities ahead—from accelerating discovery and improving healthcare delivery to rethinking the foundations of education. Notably, he pointed out that while AI's potential in medicine is already capturing global attention, its application in education remains underexplored but vital.

“How should we think about educating the next generation of physicians, lawyers, even scientists based on generative AI?” he posed, admitting that while answers remain elusive, asking the right questions is the first critical step.

**A Growing Movement: Responsible AI for Safe and Equitable Health**

Stanford Health AI Week, presented by the Raise Health initiative, further explored these themes. As the dean noted, this event has rapidly become a leading forum for exchanging ideas and fostering innovation at the intersection of AI and human well-being.

In closing, he celebrated the collaborative spirit and promised continued partnership, declaring this a defining moment of possibility.

View the full talk on: **Dean's Welcome**

## "We are still in the very early days

**... of what is possible by deploying various forms of AI in discovery, in the delivery of health care and also, very importantly, in education."**

BIO

# Sylvia K. Plevritis

**Sylvia K. Plevritis**

William M. Hume Professor in the School of Medicine, Professor of Biomedical Data Science and of Radiology and Chair of the Department of Biomedical Data Science at Stanford University

Dr. Sylvia K. Plevritis is the William M. Hume Professor in the School of Medicine, Professor of Biomedical Data Science and of Radiology and Chair of the Department of Biomedical Data Science at Stanford University. She leads a systems biology cancer research program that bridges multiomic, imaging, clinical and population data to decipher properties of cancer progression and drug response. Dr. Plevritis received her Ph.D. in Electrical Engineering and M.S. in Health Services Research, both from Stanford University, with a focus on cancer imaging physics and modeling cancer outcomes, respectively. She is a fellow of the American Institute for Medical and Biological Engineering (AIMBE) and Distinguished Investigator in the Academy of Radiology Research. Dr. Plevritis has served on numerous NIH study sections, chaired scientific programs for several professional societies including the American Association for Cancer Research (AACR) and presented keynote lectures across multiple scales of computational cancer biology. She served on the NCI Board of Scientific Advisors from 2016-2024. She is actively serving as Associate Director for Cancer AI in the Stanford Cancer Institute. Sylvia Plevritis is the Program Director of the Stanford Center in Cancer Systems Biology (CCSB) and is a Principal Investigator with the NCI Cancer Intervention Surveillance Network (CISNET).


1. *A quantitative spatial cell-cell colocalizations framework enabling comparisons between in vitro assembloids and pathological specimens. Feb 2025.*
2. *Identification of cell types in multiplexed in situ images by combining protein expression and spatial information using CELESTA. Jun 2022.*
3. *Lymph node colonization induces tumor-immune tolerance to promote distant metastasis. May 2022.*


**"The traditional decades-old approach of AI has focused on a single mode of data, but now we can use all multimodal data to build foundation models for improved understanding of human tumor biology and improved cancer decision-making."**

SPEAKER SYLVIA PLEVRITIS

# AI Frontiers in Healthcare and Medicine

**Introduction**

Sylvia Plevritis discussed the transformative potential of multimodal data integration in biomedical data science. She highlighted the role of the Department of Biomedical Data Science at Stanford in using AI and machine learning to advance our understanding of health and disease. They do this by integrating various types of data with a multidisciplinary team.

**Department Overview**

The Department of Biomedical Data Science at Stanford, celebrating its 10th anniversary, comprises around 60 faculty members with expertise in statistics, computer science, engineering and bioinformatics. The department is dedicated to advancing biomedical research and improving clinical decision support through the analysis of complex biomedical datasets using AI and machine learning.

**Mission and Vision**

The department's mission is to lead in AI and ML by leveraging complex biomedical datasets to answer critical questions in biomedicine and healthcare. The vision is to transform the current AI and biotech revolution into a knowledge revolution, enhancing our understanding of the molecular basis of health and disease.

**Multimodal Data Integration**

Multimodal data integration involves combining the electronic health record, imaging data from radiology and pathology and molecular data to create a comprehensive understanding of patient health across time. This approach goes beyond traditional data analysis that only looks at one type of data at a time. It allows us to create foundation models that combine different data types during a patient's journey to make better decisions.

**Flagship Projects**

1. **Tumor Boards:** The department is working on a project to provide AI-assistance at multidisciplinary tumor boards. They are combining data from EHR, radiology imaging and molecular data to improve clinical decisions, predict clinical events and match patients to clinical trials. The department got a grant from ARPA-H to build a data lake that can store data from many different sources. They will also create databases that can store data from different sources and create AI models that can make data easier to work with and analyze.
2. **Weill Foundation Grant:** Another project focuses on federated model building between Stanford and UCSF, using multimodal learning to improve healthcare outcomes.

View the full: **Opening Talk**

**Research Focus**

Plevritis's lab is studying advanced-stage cancer patients with metastatic disease, focusing on lymph node biology. Through funding by the National Cancer Institute Cancer Systems Biology Consortium, the research aims to understand how lymph nodes contribute to metastasis and explore therapeutic implications for reprogramming lymph nodes to prevent metastatic spread.

**Spatial Biology**

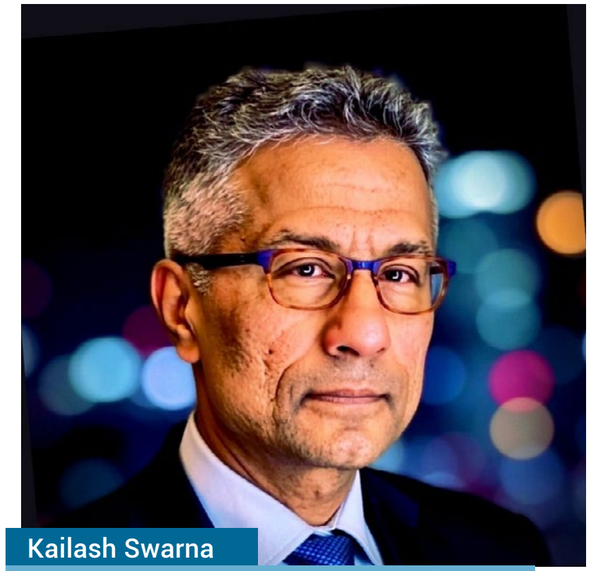
The lab uses spatial profiling to look at primary tumors and metastatic cells in lymph nodes and distant sites. They use deep molecular, spatially-resolved data at the single cell level. This approach helps identify different cell communities within tumors and their role of these communities in cancer progression and drug response. The goal is to target non-cancer cells in the tumor microenvironment to make therapies targeting the cancer cells more effective.

## "We are at a very exciting time

... where we have data on individual patients, not only through EHR, imaging and genomic but also deeper molecular data at single cell resolution. "

BIO

# Kailash Swarna



Kailash Swarna
Managing Director in the R&D Practice at Accenture Life Sciences

As a Managing Director in the R&D Practice at Accenture Life Sciences, Kailash Swarna leads a global team of experts dedicated to transforming the discovery and development of therapeutic solutions through innovative approaches. With over 25 years of experience in drug discovery and development, he brings deep expertise in navigating the evolving challenges and opportunities within the life sciences and healthcare sectors.

Kailash collaborates with clients across the public and private sectors—including biopharmaceutical companies, medical device manufacturers, academic institutions and government agencies—to design and implement scalable, inclusive digitalization strategies that enhance R&D productivity, quality and speed. By leveraging emerging technologies, data-driven insights, and patient-centric methods, he help accelerate the delivery of effective medicines, devices and digital health solutions to those who need them—more efficiently and affordably.

**" Generative AI allows us to interact with models in the language of our domain and receive credible answers. "**

SPEAKER KAILASH SWARNA

# Transforming Drug Discovery and Healthcare with AI

**Introduction**

The talk by Kailash Swarna focused on the transformative potential of AI in drug discovery and healthcare. He emphasized the importance of collaboration between industry, academia and AI practitioners to drive innovation in these fields.


**The Evolution of Protein Sciences**

Swarna recounted the evolution of protein sciences, from structural biology and cryo-electron microscopy to the revolutionary impact of AlphaFold. These advancements have fundamentally changed our understanding of disease origins and protein sciences, highlighting the convergence of AI, data science and generative AI in transforming drug discovery and care delivery.

**Data-Centric Approach**

At the core of these advancements is access to high-quality, large volumes of data. Swarna stressed that drug discovery and human health are increasingly becoming data problems rather than purely biological ones. The integration of multimodal data, including electronic health records, imaging data and lab data, is crucial for understanding patient outcomes and disease progression.

**Case Studies**

1. Immune Checkpoint Inhibitors: Swarna discussed the transformative impact of immune checkpoint inhibitors on cancer treatment. Despite their effectiveness, only about 30% of patients respond, and the reasons for this variability remain a data problem. Efforts are underway to identify patients likely to experience dose-limiting organ toxicity before treatment.
2. Neurosciences and Dementia: The development of blood-borne biomarkers for predicting disease progression in dementia is another area where AI and data science are making significant strides. The goal is to create composite biomarkers that are more predictive of disease outcomes.

**AI and Drug Discovery**

AI is playing a pivotal role in drug discovery by merging core biological sciences with data science. Techniques like federated learning are being used to train models that are more predictive of disease causality. The integration of data science with core sciences is enabling a deeper understanding of disease mechanisms and accelerating drug discovery.

View the full: **Opening Talk**

**Generative AI and Accessibility**

Generative AI is democratizing access to data science tools. Students and researchers no longer need to be classically trained data scientists to interact with complex models. They can use domain-specific language to query models and receive credible answers, enhancing their ability to conduct research and make discoveries.

**Future Directions**

Swarna highlighted ongoing collaborations with global centers, including a project in India focused on rare head and neck cancers. These collaborations aim to leverage data science to improve treatment outcomes and re-treat tumors that initially evade immune checkpoint inhibitors.

## "Drug discovery and care

... delivery in human health is really not a biology problem, it's a data problem. "

BIO

# Nigam H. Shah

**Nigam H. Shah**

Professor of Medicine at Stanford University, and Chief Data Scientist for Stanford Healthcare

Dr. Nigam Shah is Professor of Medicine at Stanford University and Chief Data Scientist for Stanford Health Care. His research group analyzes multiple types of health data (EHR, Claims, Wearables, Weblogs and Patient blogs), to answer clinical questions, generate insights and build predictive models for the learning health system. At Stanford Healthcare, he leads artificial intelligence and data science efforts for advancing the scientific understanding of disease, improving the practice of clinical medicine and orchestrating the delivery of health care.

Dr. Shah is an inventor on eight patents and patent applications, has authored over 200 scientific publications and has co-founded three companies. Dr. Shah was elected into the American College of Medical Informatics (ACMI) in 2015 and was inducted into the American Society for Clinical Investigation (ASCI) in 2016.

He holds an MBBS from Baroda Medical College, India, a PhD from Penn State University and completed postdoctoral training at Stanford University.

> **"We need to justify the costs of collecting and maintaining patient timeline objects by demonstrating their value in advancing science, improving medical practice and delivering healthcare at scale."**


1. *MedHELM: Holistic Evaluation of Large Language Models for Medical Tasks. Jun 2025.*
2. *The Optimization Paradox in Clinical AI Multi-Agent Systems. Jun 2025.*

SPEAKER NIGAM SHAH

# Leveraging Multimodal Data for AI in Healthcare

**Introduction**

Nigam Shah's talk focused on the challenges and strategies for leveraging multimodal data in healthcare AI. He emphasized the importance of creating comprehensive patient timeline objects and the economic and practical challenges associated with this endeavor.

**Creating Patient Timeline Objects**

Shah began by asking the audience to visualize a patient timeline, marking significant medical events and the types of data generated at each point. This timeline includes various data modalities such as ICD codes, CPT codes, notes, medication orders, lab tests, imaging studies and more. He highlighted the sparsity of data across these modalities, as not all types of data are collected at every medical event.

**Data Collection and Integration**

The patient timeline object is scattered across numerous IT systems, making data collection and integration challenging. Shah stressed that good AI begins with good data and the mindset towards missing data needs to change. Missing data can provide valuable information, indicating that certain measurements were not necessary.

**Economic Considerations**

Shah discussed the high costs associated with collecting, maintaining and processing patient timeline objects. He emphasized the need to justify these costs by demonstrating the value of the data in advancing science, improving medical practice and delivering healthcare at scale.

**Three Buckets of AI Application**

Shah categorized the applications of AI in healthcare into three buckets:

1. Advancing Science: Research that leads to significant scientific discoveries, published in high-impact journals.
2. Improving Medical Practice: Enhancing clinical decision-making and patient care, with outcomes published in medical journals.
3. Delivering Healthcare at Scale: Ensuring the financial sustainability of healthcare delivery to large populations.

**Traditional and Generative AI**

Shah contrasted traditional AI methods, such as logistic regression and predictive models, with the emerging field of generative AI. He acknowledged the excitement and skepticism surrounding generative AI, noting the need for responsible deployment and verification of benefits.

View the full: **Opening Talk**

**Responsible AI Lifecycle**

Stanford's approach to AI includes assessing the fairness, usefulness, reliability, and monetary sustainability of models. Shah mentioned initiatives like FURM (Fairness, Usefulness, Reliability, Monetary sustainability) and RAIL (Responsible AI Lifecycle) to ensure responsible AI deployment.

**MedHELM Project**

The MedHELM project aims to create a comprehensive evaluation framework for language models in healthcare. It includes a list of tasks, corresponding datasets, and scoring mechanisms to grade model performance. This project is crucial for verifying the benefits of generative AI in healthcare.

**Open Source and Economic Models**

Shah advocated for open-source models to avoid dependency on technology companies and reduce healthcare costs. He suggested that entities like Accenture could seed the adoption of open-source models, fostering a community-driven approach to AI in healthcare.

> **"Good AI**
>
> ... begins with good data. **"**

BIO

# Emily Alsentzer

**Emily Alsentzer**
Assistant Professor in Biomedical Data Science and, by courtesy, Computer Science

Dr. Emily Alsentzer is an Assistant Professor in Biomedical Data Science and, by courtesy, Computer Science at Stanford University. Her research leverages machine learning (ML) and natural language processing (NLP) to augment clinical decision-making and broaden access to high quality healthcare. She focuses on integrating medical expertise into ML models to ensure responsible deployment in clinical workflows. Dr. Alsentzer completed a postdoctoral fellowship at Brigham and Women's Hospital where she worked to deploy ML models within the Mass General Brigham healthcare system. She received her PhD from the Health Sciences and Technology program at MIT and Harvard Medical School and holds degrees in computer science (BS) and biomedical informatics (MS) from Stanford University.

She has served as General Chair for the Machine Learning for Health Symposium and founding organizer for SAIL and the Conference on Health, Inference and Learning (CHIL).

**"We're focused on how to better infuse biomedical domain knowledge into machine learning models—so they're more trustworthy, generalizable and clinically useful."**


1. *Simulation of undiagnosed patients with novel genetic conditions. Oct 2023.*
2. *Few shot learning for phenotype-driven diagnosis of patients with rare genetic diseases. June 2025.*

SPEAKER EMILY ALSENTZER

# Accelerating Rare Disease Diagnosis Through Knowledge-Enhanced Foundation Models

**The Challenge of Rare Disease Diagnosis**

The session focused on the development of SHEPHERD, a knowledge-enhanced graph neural network designed to support the diagnosis of rare genetic diseases. While rare diseases collectively affect 1 in 20 people worldwide, each individual condition impacts fewer than 50 in 100,000.

Their clinical heterogeneity and low prevalence make diagnosis especially difficult—often resulting in years-long delays. SHEPHERD was developed to help close this gap, using a few-shot learning framework that integrates biomedical knowledge graphs with patient-specific phenotypic and genetic data.


**The Power of Biomedical Knowledge Graphs**

Traditional language models can fall short in biomedicine because they underutilize curated, structured knowledge central to the domain. SHEPHERD addresses this limitation by incorporating gene-disease-phenotype relationships from established databases into a comprehensive graph with over 100,000 nodes and 2 million edges. Patients are modeled as subgraphs, allowing the model to reason over complex, multi-scale biological relationships and identify potential causal genes, even in the absence of previously documented cases.

**Synthetic Patients, Real Impact**

Given the scarcity of annotated rare disease cases, SHEPHERD is trained on over 42,000 synthetic patients simulated using Orphanet data. This enables the model to learn effectively despite limited real-world examples, handle noisy or incomplete phenotypic data and generalize to novel conditions.

**Results and Future Directions**

SHEPHERD was evaluated on cases from the Undiagnosed Diseases Network (UDN), a nationwide program dedicated to diagnosing patients with some of the most complex rare genetic conditions. These cases represent the cutting edge of diagnostic challenge—where conventional methods often fall short. In this demanding setting, SHEPHERD ranked the correct causal gene first in 43% of cases, outperforming both traditional machine learning and leading language model-based approaches. Looking forward, the team is exploring hybrid models that fuse the reasoning power of knowledge graphs with the generative strengths of large language models, as well as early detection of rare diseases from longitudinal EHR data.

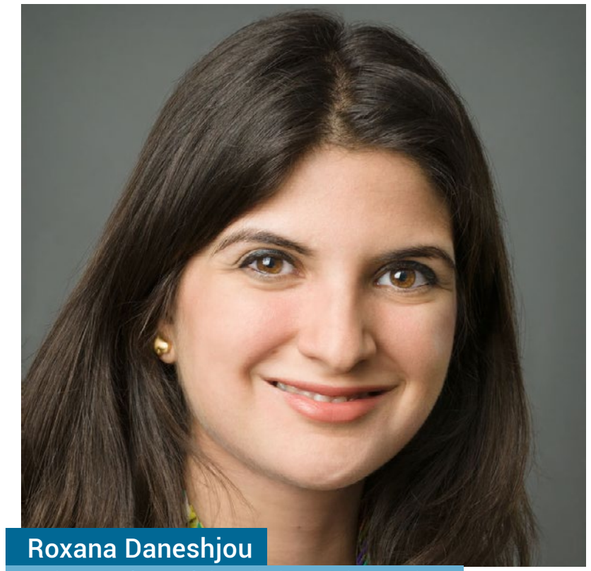
View the full talk on: Knowledge-Enhanced Foundation Models for Rare Disease Diagnosis

## "By training on simulated patients

... and representing individual cases as subgraphs within a broader knowledge graph, we're able to generalize to previously unseen diseases while preserving patient privacy. This strategy—contextualizing patient data within a knowledge graph—is broadly applicable across clinical domains, from rare disease diagnosis to structured EHR and claims-based analytics. "

BIO

# Roxana Daneshjou



**Roxana Daneshjou**
Assistant Professor of Biomedical Data Science and of Dermatology

Dr. Daneshjou studied Bioengineering at Rice University before matriculating to Stanford School of Medicine where she completed her MD and a PhD in Genetics with Dr. Russ Altman as part of the medical scientist training program. She completed dermatology residency at Stanford as part of the research track and completed a postdoc in Biomedical Data Science with Dr. James Zou. She currently is the assistant director of the Center of Excellence for Precision Heath & Pharmacogenomics, director of informatics for the Stanford Skin Innovation and Interventional Research Group (SIIRG), a founding member of the Translational AI in Dermatology (TRAIND) group and a faculty affiliate of Human-centered Artificial Intelligence (HAI) and the AI in Medicine and Imaging (AIMI) centers.


1. *Transparent medical image AI via an image–text foundation model grounded in medical literature. Apr 2024.*
2. *Red teaming ChatGPT in medicine to yield real-world insights on model behavior. Mar 2025.*
3. *An evaluation framework for clinical use of large language models in patient interaction tasks. Jan 2025.*


**"Models can perpetuate biases that are concerning and may not be detected through traditional evaluation methods."**

SPEAKER ROXANA DANESHJOU

# Large Language Models in the Wild: A Zoological Approach to Understanding AI Behaviour

**Introduction**

The talk explored the challenges and methodologies for evaluating large language models (LLMs) in healthcare. The speaker emphasized the lack of a unifying theory for these models and the need for comprehensive evaluation frameworks.

**The Zoological Approach to Evaluation**

LLMs are often evaluated in a fragmented manner, akin to studying an animal without understanding its entirety. Evaluations typically focus on specific tasks like exam questions, summarization, or reasoning, without a cohesive understanding of the model's behavior.


**Training and Transparency**

The speaker highlighted the opaque nature of LLM training, including the data used and the reinforcement learning techniques applied. Despite this lack of transparency, these models are rapidly being integrated into healthcare systems, necessitating robust evaluation methods.

**Practical Exercise**

Attendees were asked to generate their bios using different LLMs to illustrate the variability and potential inaccuracies in model outputs. This exercise underscored the importance of understanding and validating the information provided by these models.

**Bias and Safety Concerns**

Evaluations conducted by the speaker's lab revealed that LLMs can perpetuate biases, including false racist beliefs in medicine. A red teaming event further identified vulnerabilities in AI systems, with models responding inappropriately 20% of the time to real-world medical use cases.

**Realistic Evaluation Schemes**

The speaker's team developed realistic evaluation schemes, including creating patient and physician agents to simulate real-world interactions. These evaluations showed that models perform best when given structured information but struggle with dynamic, real-world scenarios.

View the full talk on: Large Language Models in the Wild: A Zoological Approach to Understanding AI Behaviour

"We need better ways

... of evaluating the real-world applications of LLMs in healthcare. "

BIO

# Robert Tibshirani

Robert Tibshirani
Professor of Biomedical Data Science and of Statistics

Robert Tibshirani is a Professor of Biomedical Data Science and of Statistics, at Stanford University. He has made important contributions to the statistical analysis of complex datasets. Some of his most well-known contributions are the Lasso, which uses L1 penalization in regression and related problems, generalized additive models and Significance Analysis of Microarrays (SAM). He also co-authored five widely used books ‘Generalized Additive Models’, ‘An Introduction to the Bootstrap’, ‘The Elements of Statistical Learning’, "An Introduction to Statistical learning" and ‘Sparsity in Statistics: the Lasso and its generalizations’. He is an active collaborator with many scientists at Stanford Medical school. Tibshirani received the COPSS Presidents' Award in 1996. Given jointly by the world's leading statistical societies, the award recognizes outstanding contributions to statistics by a statistician under the age of 40. He was elected a Fellow of the Royal Society of Canada in 2001, the National Academy of Sciences in 2012 and the Royal Society of Britain in 2019.

In 2021 he received the ISI Founders of Statistics Prize for his 1996 paper Regression Shrinkage and Selection via the Lasso. In 2024 he received the COPSS Distinguished Achievement Award and WNAR/IBS Outstanding Impact Award.


1. *LLM-Lasso: A Robust Framework for Domain-Informed Feature Selection and Regularization. Feb 2025.*
2. *BIOMEDICA: An Open Biomedical Image-Caption Archive, Dataset and Vision-Language Models Derived from Scientific Literature. Apr 2025.*

SPEAKER ROBERT TIBSHIRANI

# LLM-Lasso: A Robust Framework for Domain-Informed Feature Selection and Regularization

**Introduction**

The talk focused on innovative approaches to supervised learning, particularly in the context of predicting medical outcomes using gene data. The speaker introduced a novel method that integrates large language models (LLMs) to enhance traditional machine learning algorithms.

**The Role of LLMs in Supervised Learning**

Supervised learning involves using training data to predict outcomes based on input features. Traditionally, these features are used without considering their names or inherent significance. The new approach leverages LLMs to provide gene importance scores, incorporating domain-specific knowledge into the learning process.

**The Lasso Algorithm and Its Extension**

The Lasso algorithm, known for its interpretability, was highlighted as a key method. It assigns weights to features, controlling overfitting by setting a budget on the total absolute value of the weights. The extended Lasso algorithm integrates gene importance scores from LLMs, enhancing its predictive power.

**Practical Applications**

The method was applied to classify types of lymphoma using gene expression data. By incorporating LLM-derived importance scores, the algorithm achieved better accuracy compared to traditional methods. This approach not only improved predictions but also provided familiar gene lists to oncologists, fostering trust in AI-driven results.

**Addressing Hallucinations and Validation**

To mitigate the risk of hallucinations, the importance scores from LLMs were validated through cross-validation. This process ensures that the algorithm uses reliable information, enhancing its robustness. Additionally, adversarial attacks were tested to assess the algorithm's resilience against corrupted data.

View the full talk on: LLM-Lasso: Robust Framework for Domain-Informed Feature Selection and Regularization

## "This approach fosters trust

... by combining familiar and new gene insights, making AI-driven predictions more acceptable to scientists. "

BIO

# Akshay Chaudhari

**Akshay Chaudhari**
Assistant Professor (Research) of Radiology (Integrative Biomedical Imaging Informatics at Stanford) and of Biomedical Data Science

Dr. Chaudhari is an Assistant Professor of Radiology and of Biomedical Data Science. Dr. Chaudhari leads the Machine Intelligence in Medical Imaging research group at Stanford focusing on improving both the acquisition and analysis of medical images and related healthcare data.

His group develops new self-supervised and representation learning techniques for multi-modal deep learning for healthcare using vision, language and medical records data. Dr. Chaudhari's research is funded by the NIH, ARPA-H and several industry partners. He has won the W.S. Moore Young Investigator Award and the Junior Fellow Award from the International Society for Magnetic Resonance in Medicine and is inducted into the Academy of Radiology's Council of Early Career Investigators in Imaging program.

He also serves as the Co-Director of the Stanford Radiology AI Development and Evaluation Laboratory as well as the Associate Director of Research and Education at the Stanford AIMI Center.


1. *A vision–language foundation model for the generation of realistic chest X-ray images. Aug 2024.*
2. *Merlin: A Vision Language Foundation Model for 3D Computed Tomography. Jun 2024.*

SPEAKER AKSHAY CHAUDHARI

# Vision-Language Foundation Models for Radiology AI

**Introduction**

The recent advancements in foundation models have opened new horizons in medical imaging. These models, trained on vast and diverse datasets, are transforming how medical data is interpreted and utilized. The focus is on leveraging language as a powerful tool to enhance the quality and efficiency of medical imaging tasks.

**The Power of Language in Medical Imaging**

Language plays a crucial role in training high-quality models for medical imaging. It not only helps in learning better representations of data but also serves as an effective output for these models. The integration of language models with medical imaging tasks has shown promising results, particularly in summarizing clinical texts and generating radiology reports.

**Foundation Models and Their Capabilities**

Foundation models are trained on a wide variety of unlabeled and unstructured datasets, including text, imaging data, video data and more. These models can adapt to multiple downstream tasks, either in a zero-shot manner or through few-shot fine-tuning. The versatility of these models is evident in their ability to handle various medical imaging tasks, from summarizing clinical texts to generating synthetic medical images.

**Clinical Text Summarization**

A study conducted last year demonstrated the effectiveness of different language models in summarizing clinical texts. The task involved condensing large blocks of clinical notes into smaller, more comprehensible texts. The best-performing model was GPT-4, which excelled in in-context learning. A reader study with 10 physicians revealed that model-generated summaries were preferred over human-generated ones for completeness and correctness.

**Radiology Report Generation**

The foundation model for chest X-rays, known as CheXagent, was trained on a large corpus of image-text pairs. This model significantly improved the efficiency of generating radiology reports. Residents using the model could draft initial reports faster than those working independently. The quality of model-generated drafts was comparable to those created by residents, indicating potential efficiency gains without compromising quality.

**Generative Image Models**

The application of generative image models in medical imaging has shown potential in creating synthetic data. By adapting models like Stable Diffusion to medical examples, highly realistic synthetic images can be generated. This approach can bootstrap large synthetic datasets, enhancing the performance of downstream classification models.

View the full talk on: Vision-Language Foundation Models for Radiology AI

**High-Dimensional Imaging**

The Merlin model was developed to interpret abdominal CT scans, trained on a vast dataset from Stanford. This model can handle high-dimensional images and long texts, performing tasks like zero-shot finding classification, phenotype prediction and cross-modal retrieval. The model's efficiency in training and its ability to perform multiple tasks make it a valuable tool in medical imaging.

**Conclusion**

The integration of language and imaging models is revolutionizing medical imaging. These foundation models offer significant efficiency gains and improved quality in medical tasks. The open-source nature of these models encourages further innovation and collaboration in the field.

> "Language can be really powerful,
>
> ... both as an input and output for these models. "

BIO

# Tina Hernandez-Boussard

**Tina Hernandez-Boussard**

Professor of Medicine (Biomedical Informatics), of Biomedical Data Science, of Surgery and, by courtesy, of Epidemiology and Population Health Medicine - Biomedical Informatics Research

Dr. Hernandez-Boussard is an Associate Dean of Research and Professor of Medicine (Biomedical Informatics), Biomedical Data Science, Surgery and Epidemiology & Population Health (by courtesy) at Stanford University. With a rich background and vast expertise in biomedical informatics, health services research, and epidemiology, she is at the forefront of advancing healthcare through the development, evaluation and application of innovative methods. Through her research, she aims to effectively monitor, measure and predict equitable healthcare outcomes. By leveraging real-world data, her team works diligently to construct a solid body of evidence that can significantly enhance patient outcomes, streamline healthcare delivery and provide valuable guidance for health policy decisions.

In addition, Dr. Hernandez-Boussard focuses intensively on mitigating bias and enhancing equity within artificial intelligence applications in healthcare settings. Through her research and evaluation of AI technology, she seeks to advance healthcare practices while ensuring that diverse populations receive equitable resources, care and outcomes.

> **"Transparency is the key to trust building."**


1. *Clinical trials informed framework for real world clinical implementation and deployment of artificial intelligence applications. Feb 2025.*
2. *The AI life cycle: a holistic approach to creating ethical AI for health decisions. Sep 2022.*

SPEAKER TINA HERNANDEZ-BOUSSARD

# Beyond Bias: Building Responsible AI for Inclusive Health Solutions

**Introduction**

The talk focused on the responsible use of AI in healthcare, considering a national platform to ensure generalizability and applicability across diverse healthcare systems. The speaker emphasized the importance of trust and transparency in AI evaluations.

**Trust and Transparency in AI**

Trust is a critical component when evaluating AI models. Different stakeholders, including patients, clinicians, researchers and payers, have varying concerns about AI's role in healthcare. Patients worry about bias and inclusion in training data, clinicians question model accuracy and workflow impact, researchers focus on reproducibility and payers seek reliable evaluations.


**The AI Lifecycle**

The AI lifecycle encompasses data creation, acquisition, model development, evaluation and deployment. Bias can enter at any stage, making it essential to scrutinize each phase carefully. The speaker highlighted the need for transparency in data used for training models, especially when applying these models to different healthcare settings, as well as the breadth of evaluations performed.

**Data Creation and Acquisition**

Understanding the data used to train AI models is crucial. We often aggregate data to protect patient privacy, yet this often leads to merging groups, which can obscure specific population insights. Transparency in data creation and acquisition helps ensure models are evaluated fairly across diverse populations.

**Model Development and Evaluation**

Model development is often the focus of responsible AI. However, evaluations often focus on performance metrics like ROC curves and accuracy, neglecting bias analysis and fairness. Evaluating models across different populations and defining metrics of fairness are essential for comprehensive assessments.

**Model Deployment**

Model deployment is a critical yet underreported phase. Failures in deployment are rarely documented, creating a gap in understanding AI's real-world impact. The speaker stressed the importance of post-deployment monitoring to assess societal impact, algorithm drift and retraining needs.

View the full talk on: Beyond Bias: Building Responsible AI for Inclusive Health Solutions

**Guiding Principles for AI Evaluation**

The speaker outlined five guiding principles for overcoming trust gaps in AI evaluation:

1. Promote Health and Healthcare: Ensure AI models enhance health and well-being.
2. Transparency: Make algorithms and their testing processes clear.
3. Engage Patients and Communities: Involve patients and communities in the evaluation process.
4. Identify Fairness Issues: Be transparent about healthcare fairness issues.
5. Establish Accountability: Define accountability for AI model outcomes.

**Transparency and Explainability**

Transparency and explainability are vital across the AI lifecycle. Educating patients about AI-generated summaries and referrals, incorporating AI into clinician education and using model cards for transparency are key steps. Standards for fairness and clear communication from payers are also necessary.

**Safe Deployment Framework**

The speaker proposed a framework for safely deploying AI in clinics, similar to rolling out CTs:

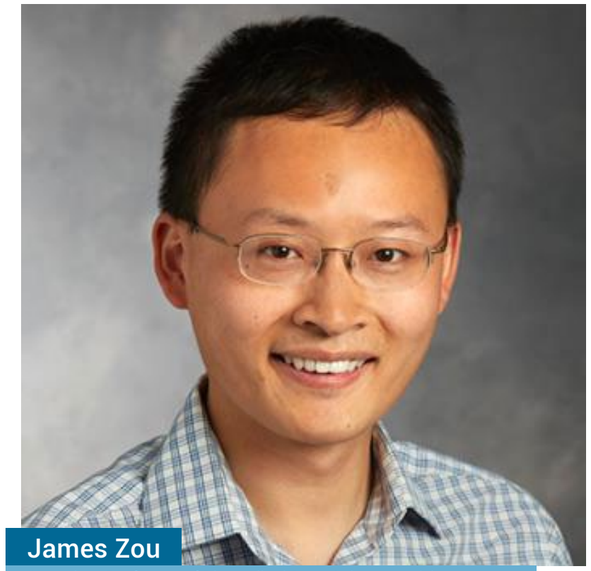
1. Phase One: Safety evaluation pre-deployment.
2. Phase Two: Efficacy testing in small cohorts.
3. Phase Three: Broad deployment across populations.
4. Phase Four: Post-deployment monitoring for societal impact and algorithm drift.

## "We need to think

... about these guiding principles before developing the model, not as an afterthought. "

BIO

# James Zou



**James Zou**
Associate Professor of Biomedical Data Science and, by courtesy, of Computer Science and Electrical Engineering

Dr. Zou is an Associate Professor of Biomedical Data Science and, by courtesy, of Computer Science and Electrical Engineering at Stanford University. He works on making AI more reliable, human-compatible and statistically rigorous and is especially interested in applications in human disease and health. Dr. Zou received his Ph.D from Harvard in 2014 and was at one time a member of Microsoft Research, a Gates Scholar at Cambridge and a Simons fellow at U.C. Berkeley. He joined Stanford in 2016 and is excited to also be a Chan-Zuckerberg Investigator. He is also a part of the Stanford AI Lab. Dr. Zou's research is supported by two Chan-Zuckerberg Biohub Investigator Awards, the Sloan Fellowship, the NSF CAREER Award, a Top Ten Clinical Achievement Award and faculty awards from Google, Adobe and Amazon.

**"The Virtual Lab School enables AI agents to develop deeper expertise and collaborate efficiently, accelerating the innovation process."**


1. *Optimizing generative AI by backpropagating language model feedback. Mar 2025.*
2. *The Virtual Lab: AI Agents Design New SARS-CoV-2 Nanobodies with Experimental Validation. Nov 2024.*

SPEAKER JAMES ZOU

# AI Agents for Biomedicine and Healthcare

**Introduction**

Recent advancements in AI are transforming research and development (R&D) by introducing AI agents that act as flexible teammates rather than mere tools. These agents are designed to tackle broader research innovations, moving beyond narrowly defined tasks.

**The Virtual Lab Concept**

The Virtual Lab is a groundbreaking platform where AI scientists collaborate with human researchers. This environment includes AI professors and student agents specializing in fields like data science, biology and clinical trials. These agents continuously enhance their expertise through the Virtual Lab School, a self-improvement mechanism that deepens their knowledge beyond initial programming.

**Applications and Innovations**

The Virtual Lab has achieved significant milestones, such as designing new vaccine candidates for COVID-19 variants. AI agents, through efficient virtual meetings, developed innovative computational workflows and identified promising nanobody candidates. These candidates were experimentally validated, showcasing the practical impact of AI-driven research.

**Enhancing Clinical Trials**

AI agents play a crucial role in optimizing clinical trial designs. Trained on extensive FDA documentation, these agents can predict regulatory questions and suggest mitigation strategies, accelerating the drug development process and ensuring compliance with regulatory standards.

**Technical Challenges and Solutions**

To address technical challenges, the speaker introduced TextGrad, a novel optimization method for AI systems. This method allows for efficient, text-based optimization of AI agents, enhancing their performance in complex tasks such as molecule design and cancer treatment planning.

View the full talk on: AI Scientist Agents for Biomedical Discoveries

## "We are in a period of paradigm shift

... where AI can help us with much broader kinds of research innovations. "

BIO

# Tuomo Kiiskinen

**Tuomo Kiiskinen**

Postdoctoral Scholar in the Department of Biomedical Data Science - Dr. Manuel Rivas' Group

Dr. Tuomo Kiiskinen is a physician-scientist who uniquely blends clinical expertise with advanced biomedical data science. After obtaining his M.D. he completed his Ph.D. in population health genetics at the Institute for Molecular Medicine Finland (FIMM), University of Helsinki. During his PhD tenure, he contributed significantly to the FinnGen project, one of the world's largest biobank-based genomics studies. His clinical experience, including training in emergency medicine, internal medicine, neurosurgery, and general medicine, provides him with critical insights into real-world healthcare challenges. In 2025, Tuomo joined Dr. Manuel Rivas' group at Stanford University, where he currently leads the development of a multimodal generative AI dashboard for clinical tumor board meetings. Leveraging his combined expertise in clinical practice and biomedical data science, Tuomo is now fully committed to building new solutions using AI to transform complex clinical data into next-generation precision medicine.

"AI is the key to take things to the next level in biobank analysis."


1. *Genetic predictors of lifelong medication-use patterns in cardiometabolic diseases. Jan 2023.*
2. *Genetic risk factors have a substantial impact on healthy life years. Sep 2022.*
3. *FinnGen provides genetic insights from a well-phenotyped isolated population. Jan 2023.*

SPEAKER TUOMO KIISKINEN

# AI for Disease Risk Modeling and Inference in Rivas Lab

**Introduction**

The discussion highlighted the transformative potential of AI in healthcare, focusing on large-scale biobanks and clinical data integration. The speaker shared insights from Finland's centralized healthcare registry systems and the challenges of implementing AI in clinical settings.

**Large-Scale Biobanks**

Finland's centralized healthcare registry systems provide a unique opportunity for AI research. Decades of comprehensive data from various sources have been transformed into analyzable phenotypes. The FinnGen biobank, with half a million participants, exemplifies this approach, creating phenotyping algorithms for over 5,000 medical entities. This data is now accessible through tools that allow exploration of medical endpoints across the Finnish population.

**AI in Biobank Analysis**

AI is seen as the key to advancing biobank analysis. The integration of AI can help represent longitudinal trajectories of multimodal data, making it more analyzable. AI can also assist in identifying causal genes, leveraging models like LASSO to inform about gene importance.

**Clinical Data Integration**

The speaker contrasted the flexibility of data science with the constraints of clinical work, particularly the cumbersome EHR systems. These systems are expensive, hard to use and often inefficient. The vision is to move towards a database-oriented architecture where AI reads the database and creates smaller, more efficient apps for clinical use.

**Tumor Board Dashboard Prototype**

A prototype dashboard for oncology was introduced, where an LLM reads the database and forms structured data for the app. This system can quickly generate comprehensive patient reports, significantly reducing the time required for manual data review. The dashboard includes interactive chat features, allowing clinicians to ask questions and receive detailed responses.

**Motivational Story**

The speaker shared a personal experience from working in an emergency room, highlighting the potential of AI to lighten the workload by providing interactive support. This vision includes an AI system that can quickly retrieve and summarize patient information, enhancing clinical efficiency.

**Future Directions**

The speaker emphasized the need for AI to bridge the gap between clinical work and omics-related research. AI can integrate these domains, providing comprehensive insights and improving healthcare outcomes.

> "With AI, we can create much smaller apps
>
> ... on top of a database-oriented architecture, improving clinical efficiency. "

View the full talk on: AI for Disease Risk Modeling and Inference in Rivas Lab

BIO

# Jason Fries

Jason Fries
Research Scientist, Stanford Center for Biomedical Informatics Research

Jason Fries' research focuses on training and evaluating foundation models for healthcare, positioned at the intersection of computer science, medical informatics and hospital systems. His work explores the use of electronic health record (EHR) data to contextualize human health, leveraging longitudinal patient information to inform model development and evaluation. His research has been published in venues such as NeurIPS, ICLR, AAAI, Nature Communications and npj Digital Medicine.

"Frontier LLMs are trained on everything findable on the Internet, but that's not enough for healthcare. To reason about real patients, they also need to learn from real electronic health records."


1. *MOTOR: A Time-To-Event Foundation Model For Structured Medical Records. Jan 2024.*
2. *Time-to-Event Pretraining for 3D Medical Imaging. Mar 2025.*
3. *MedAlign: A Clinician-Generated Dataset for Instruction Following with Electronic Medical Records. Mar 2024.*

SPEAKER JASON FRIES

# Benchmarking Better: Raising the Bar for Transparency in Healthcare AI

**Introduction**

The talk focused on the critical need for transparency in benchmarking healthcare AI models. The speaker highlighted the reproducibility crisis in healthcare AI and the importance of standardized benchmarks and open data.

**Reproducibility Crisis in Healthcare AI**

Healthcare AI faces significant challenges in reproducibility. Models are often not evaluated on real-world hospital data, with less than 5% of LLM evaluations considering EHR data. This gap undermines the reliability and applicability of AI models in clinical settings.

**Ideal Benchmarking Framework**

An ideal benchmarking framework includes open data and standardized tasks, visible at the row level to identify biases and missingness. This framework should connect with an open model recipe, providing transparency in pre-training data, post-training data and the code used for data curation and model training.

**Current State of Benchmarking**

While there is a rich ecosystem of open data, many high-performing models are hidden behind APIs, limiting access to their weights and training data. This lack of transparency hinders scientific progress and trust in AI models.

**Importance of Realistic Data**

AI models must be trained and tested on data that reflects real-world conditions. Manicured and clean data used in training often fails to represent the biases and errors present in actual clinical data. This discrepancy can lead to poor performance in real-world applications.

**Experiment and Findings**

An evaluation of MedQA—a carefully curated question answering dataset—and MedAlign—a realistic, longitudinal EHR dataset—showed a striking discrepancy: models fine-tuned on short, polished patient vignettes (the prevailing task in medical LLM development) consistently underperformed on MedAlign's unstructured, real-world records. This gap underscores the danger of optimizing for benchmarks that don't reflect true clinical complexity.

**Release of Longitudinal EHR Benchmarks**

The speaker's lab released new longitudinal EHR benchmarks targeting specific classification problems. These benchmarks use EHR data, clinical notes and medical imaging, providing a comprehensive dataset for researchers.

**Open Model Weights**

The lab also released foundation model weights trained on up to 2.5 million patients' EHRs. These weights, available on Hugging Face, accompany the training code, enabling researchers to reproduce claims and advance scientific understanding.

View the full talk on: Benchmarking Better: Raising the Bar for Transparency in Healthcare AI

## "We need to move beyond

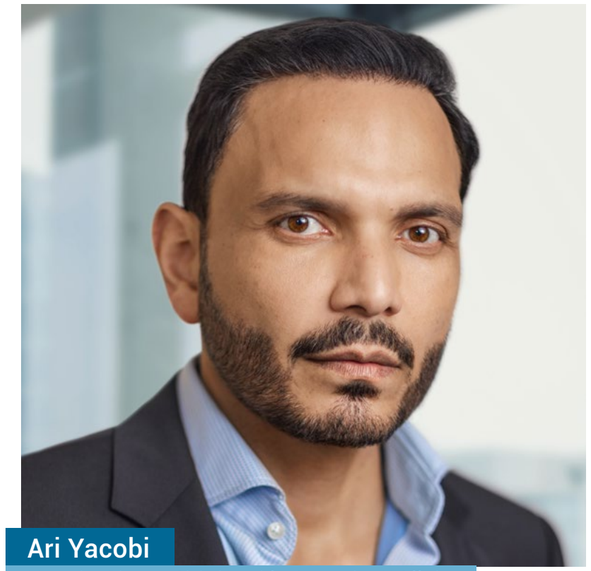
... the Internet in terms of where information is coming into these models. These models need to see what EHR data looks like."

INDUSTRY DEEP-DIVES

# Shaping the Future of AI in Healthcare and Medicine

BIO

# Ari Yacobi



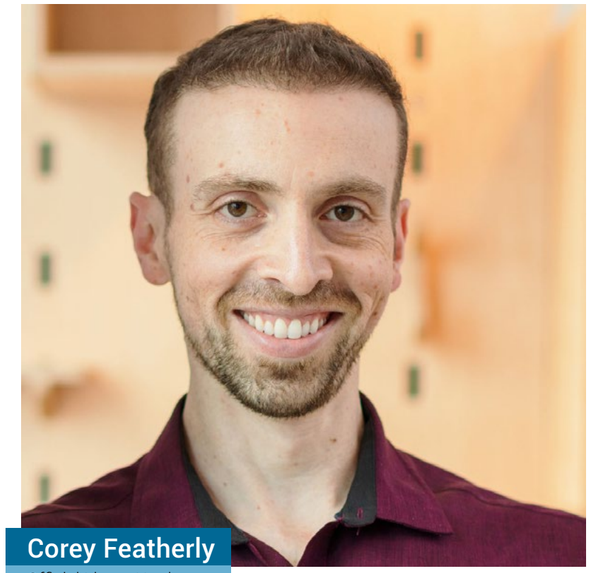
Ari Yacobi
Managing Director, Global Lead for Generative AI Offerings

Ari Yacobi is the Global Lead for Generative AI Offerings at Accenture's Center of Advanced AI, where he leads efforts to transform Accenture's client services through innovative Generative AI capabilities. His work focuses on driving strategic partnerships and academic collaborations that fuel experimentation and innovation in AI. He also oversees the development and go-to-market strategy for open-source Large Language Models, aligning them with practical applications for clients worldwide.

"LLMs are not a magic wand—but using them as a judge to filter synthetic patient data is a huge step forward."

BIO

# Corey Featherly




Corey Featherly is a Meta Llama Partner Engineer specializing in AI strategy and digital transformation. With over 15 years of experience bridging technology and measurable business outcomes, Corey partners with organizations to harness the full potential of artificial intelligence, machine learning and data-driven innovation. He excels at translating complex technical concepts into clear, actionable strategies that accelerate growth, improve operational efficiency and enhance customer experiences. Corey is passionate about building robust solutions that thrive in change and deliver lasting impact. His work empowers companies to adapt, scale and lead confidently in a rapidly evolving digital landscape.

SPEAKERS ARI YACOBI & COREY FEATHERLY

# Synthetic Data for Clinical Trials: Transforming Control Arms with LLMs

**Introduction**

Ari Yacobi from Accenture and Corey Featherly from Meta discussed the collaboration between Accenture and Meta to leverage open-source large language models (LLMs) for rare disease clinical trials control arm. They focused on the potential of Meta's Llama models to generate synthetic patient data.

**Meta's Llama Models**

Meta has developed a family of LLMs called Llama, which are open-sourced to benefit the community. These models are crucial for Meta's operations, including content moderation and ad auctions. By open-sourcing these models, Meta aims to improve AI capabilities for everyone, including their own applications.

**Challenges in Rare Disease Clinical Trials**

Clinical trials for rare diseases face significant challenges, including patient recruitment and ethical concerns. With over 7,000 rare diseases affecting millions globally, 90% of these diseases lack approved treatments. Generative AI can revolutionize the creation of synthetic control arms for these trials, addressing these challenges.

**Benefits of Generative AI**

1. Precision Fidelity: Generative AI can generate synthetic patient data that matches inclusion and exclusion criteria with high fidelity, even for rare and unseen scenarios.
2. Speed and Scalability: Once trained, generative AI models can generate cohorts in minutes, significantly reducing the time and effort required for traditional methods.
3. Bias Mitigation and Generalization: Generative AI can leverage multiple data sources to create synthetic data that reflects diverse populations, mitigating historical biases.
4. Ethical Superiority: Synthetic control arms eliminate the need for placing patients on placebos when life-saving treatments are available.
5. Forward-Looking Approach: Generative AI allows for dynamic simulations and adaptive trials, enabling researchers to explore hypothetical scenarios and improve trial planning.

View the full talk on: Synthetic Data for Clinical Trials: Transforming Control Arms with LLMs

**Approach and Pipeline**

Accenture and Meta's approach involves using multiple open-source models to create synthetic patient data. The process includes:

1. Generating Disease Progression: Using BioGPT, trained on PubMed and biomedical literature, to generate disease progression narratives.
2. Creating Synthetic Patient Notes: Fine-tuning Llama models using millions of patient records to generate EHR-style data.
3. Structuring Data: Using Llama model to create structured data in JSON and FHIR format and scaling it to generate hundreds of synthetic patients.
4. Testing for Clinical Realism: Using LLMs as judge to evaluate the quality and realism of synthetic data, with human oversight to refine the models.
5. API-Based Interface: Developing a user interface for generating control arms as a service, customizable for pharma and life sciences partners.

**Meta's Advancements**

Meta's latest Llama models feature significant improvements, including a 10 million token context window and native multimodal capabilities. These advancements enhance the performance and scalability of LLMs for healthcare applications.

> "Generative AI can completely ... change the game of how you build the control arm, how you generate synthetic patients. "

BIO

# David Galich


As Chief Product Officer for Avanade's Smart AI Governance Engine (SAIGE), Dave Galich is a technology innovator and product leader at the forefront of healthcare transformation. Dave leads the development of a responsible AI governance platform built with healthcare, for healthcare—collaborating closely with industry stakeholders to integrate their feedback into the platform's roadmap. As SAIGE is made publicly available, he also oversees efforts to ensure the service's affordability and adoptability for all health organizations, helping scale a standardized AI governance process.

In his role as leader of Avanade's North America Advisory practice, Dave leads a team of digital, technology and organizational strategists to help clients maximize the benefits of Microsoft technologies. Dave's expertise and leadership drives strategic growth in the healthcare technology space.

"Good AI governance begins with standardization and transparency."

SPEAKER DAVID GALICH

# Enabling Collaboration for a Public Facing Health Registry

**Introduction**

Dave Galich from Avanade, an Accenture-Microsoft joint venture, discussed the development of a governance platform for AI in healthcare. He emphasized the importance of standardizing and governing AI to address regulatory uncertainty, lack of transparency and inefficient solutions.


**Challenges in AI Governance**

1. Regulatory Uncertainty: The FDA regulates AI in medical devices but not in clinical decision support algorithms used by providers. With evolving regulations at the state level, healthcare organizations need to prepare for audits and documentation requirements.
2. Lack of Transparency: Patients currently lack the right to see what AI is used in their care. Providers face challenges in obtaining necessary metadata from vendors, who are hesitant to share their IP without a paying customer.
3. Inefficient Solutions: Many healthcare organizations, including Duke Health, manage AI governance manually using tools like Microsoft Excel, Box, Teams, and Outlook. This approach is labor-intensive and limits scalability.

**Avanade SAIGE Platform**

Avanade developed the Smart AI Governance Engine (SAIGE), a SaaS platform hosted on Accenture's Azure tenant. SAIGE aims to digitize AI governance workflows, centralize documentation, decision-making and AI inventory, making the process transparent and auditable.

**Roadmap and Features**

1. Early Adopter Cohorts: SAIGE is being rolled out to early adopters who will influence the platform's development and evaluation workflows.
2. Vendor Portal: Launching mid-year, this portal will facilitate collaboration between vendors and health systems, allowing vendors to manage their AI model cards.
3. AI Marketplace: Planned for the end of the year, the marketplace will offer additional functionalities, enabling health systems to find and evaluate AI models efficiently.

View the full talk on: Enabling Collaboration for a Public-facing Health Registry through Applied Model Cards

**Coalition for Health AI (CHAI)**

CHAI is a nonprofit consortium aiming to stand up a public-facing vendor registry using standardized model cards. This registry will serve as a single source of truth for vendors' AI models, detailing their training, technology and use cases.

**Applied Model Cards**

Standardized model cards will enhance collaboration between health systems and vendors. They will enable efficient research and testing within consortiums like CHAI and TRAIN, breaking down silos and reducing duplicative efforts.

**Public Registry**

The public registry will provide a searchable database of AI models, allowing health systems to find solutions for specific use cases. Features like dynamic filtering and independent validation will help organizations make informed decisions.

> "The SAIGE platform aims ... to digitize AI governance workflows, making the process transparent and auditable. "

PANELS

# Responsible AI and Evaluating AI Models

BIO - SEE PAGES 14, 20, 26 FOR OTHER PANELISTS

# Laetitia Cailleteau

**Laetitia Cailleteau**
Stanford Biomedical Data science COE Sponsor and Responsible AI Lead EMEA

Laetitia is a Managing Director at Accenture, where she leads the Responsible AI practice across Europe and oversees the Generative AI Studios in the region. She is also the Stanford Biomedical Data Science COE Sponsor. With more than 25 years of experience in data and AI-driven transformation, she is a recognized authority in the ethical deployment of emerging technologies, helping global organizations innovate responsibly and at scale.

A pioneer in AI governance, Laetitia was a member of the European Commission's High-Level Expert Group on AI, contributing to the foundational Ethics Guidelines for Trustworthy AI that informed the EU AI Act. She also holds patents in Conversational and Responsible AI and has authored multiple academic publications on the subject.

Laetitia has led large-scale digital and AI transformation programs across industries, most recently guiding a portfolio of multi-billion euro projects and a global team of over 8,000 professionals. She is known for combining deep technical insight with human-centered innovation, and has been widely recognized as one of the most influential women in AI and technology globally.

A frequent keynote speaker and board advisor, Laetitia also serves on the World Economic Forum's Global Future Council on Good Governance and the board of the Oasis Open Europe Foundation. Outside of work, she is a proud mother of three, a passionate gardener and DIY enthusiast and is developing a growing interest in public policy and politics.

BIO

# Jay Subrahmonia

Jay Subrahmonia
Responsible AI Platform Lead, Accenture

Jay Subrahmonia manages Responsible AI Technology and Product Development for Accenture globally. Her responsibilities include bringing systemic approaches to test AI solutions against different dimensions of risk and approaches to mitigate them. She leads the technical strategy for Responsible AI, including designing implementations and delivery of Responsible AI solutions for clients. Jay has more than 25 years of experience in building AI-powered products. Prior to leading Responsible AI initiatives, Jay was the global managing director for AI for Accenture's Business Process Outsourcing offerings. In this role, she drove the agenda to transform the company's service offerings through artificial intelligence. Jay has a PhD in Electrical Engineering from Brown University.

PANEL SPEAKERS

# Responsible AI and Evaluating AI Models

**Introduction**

The panel, featuring experts Laetitia Caillteteau, Jay Subramonia, Roxana Daneshjou, Jason Fries and Tina Hernandez-Boussard, explored the critical aspects of AI in healthcare, focusing on trust, cost and monitoring.

**Building Trust and Real-World Implementation**

Jay Subramonia emphasized the importance of rigorous testing and transparent communication to build trust in AI systems. She noted that 74% of AI systems fail to progress beyond pilot stages due to insufficient testing and communication, highlighting the need for patient trust through demonstrated accuracy and data privacy.

**Testing and Continuous Monitoring**

Roxana Daneshjou and Jason Fries stressed the need for real-world testing of AI systems, considering population diversity and bias. Fries emphasized the importance of constant monitoring to ensure long-term effectiveness.

**Cost and Maintenance**

The panel discussed the high costs of deploying and maintaining AI systems. Hernandez-Boussard said that it would cost the most to keep monitoring. This would require constant investment.

**Trust and Ethical Considerations**

Hernandez-Boussard underscored the need for AI to demonstrate tangible benefits, such as improved patient outcomes, to gain trust. Ethical concerns, particularly in high-risk applications like resource allocation during the COVID-19 pandemic, were discussed, emphasizing stakeholder involvement.

**Education and Generalizability**

Comprehensive training for healthcare workers is essential for effective AI implementation. Daneshjou shared her experience teaching nurses to use AI tools, stressing the importance of understanding AI's limitations and using it as a decision-support tool. The panel highlighted the need for generalizable, high-quality AI systems that work across diverse populations and settings.

The panel discussed key points for responsible AI in healthcare: thorough testing, continuous monitoring, building trust and ethical considerations. They also noted the technology's significant impact and challenges.

View the full talk on: Responsible AI and Evaluating AI Models

## "We need to show

**...that AI systems improve patient outcomes to build trust."** - Tina Hernandez-Boussard

## STARTUPS AND DEMOS

The following Startups and Demos were carefully selected to showcase emerging opportunities with AI technology during the Executive Summit.

**Stanford AI Tumor Board Dashboard:**

This prototype is a collaborative effort at Stanford that develops AI-augmented support tools for cancer tumor boards. Tumor boards consist of multi-disciplinary teams of clinicians collaborating to review data on cancer patients to determine the best course of action for each individual.

https://dbds.stanford.edu

**Accenture RAI Platform:**

Address RAI compliance at the enterprise and AI system level.

**Accenture Red Teaming:**

Helps developers identify weaknesses that could lead to biased, harmful, or incorrect outputs before models are deployed or on production models.

**Atrix:**

Atrix AI helps Life Sciences teams bridge the gap between strategy and execution driving improved patient outcomes, clinical opportunities and HCP engagement.

https://www.atrix.ai/

**Cerebra Ai:**

CelebraAI's mission is to create AI solutions that are essential in emergency medicine, revolutionizing the way critical care is delivered and ensuring better outcomes when every second counts.

https://cerebraai.ai/

**CHAI:**

Public registry for Health AI model cards.

https://dbds.stanford.edu

**Cognoa:**

Cognoa is an early childhood development and pediatric behavioral health company. It develops digital diagnostics and therapeutics that enable earlier and more equitable access to care to improve the lives and outcomes of children and families.

https://cognoa.com/

**Grove AI:**

A team of leading AI engineers and researchers enabling life sciences organizations to accelerate clinical trials at scale using data and AI.

https://www.grovetrials.com/

**Omi AI:**

AI agents that supercharge health systems through scaling parallel voice-AI powered clinical calls, text-based conversations and clinical intelligence.

https://omiagents.com

ACKNOWLEDGEMENTS

APRIL 8TH, 2025

# Join Us

Reflecting on the inaugural AI Frontiers of Healthcare and Medicine Summit, one message is loud and clear:

The future of AI is now. AI can change healthcare in many ways. It's already changing how we diagnose, treat and understand health and disease.

Realizing its full impact requires continued collaboration across sectors, disciplines and communities. We want you to stay involved, share your ideas and join us for future events. We will build momentum, strengthen partnerships and work together to create a better, more efficient, safer and human-centered healthcare system.

View the full talk on: **Closing Remarks**

## Evaluating AI in Clinical Settings

**Carol Cain, Executive Director at The Permanente Federation, KP Care Management Institute**

"This event underscored the importance of post-deployment AI monitoring, especially in clinical decision-making. The discussions on risk assessment and 'red teaming' were particularly valuable. It's a reminder that responsible AI governance is crucial in real-world applications. Grateful to Accenture for this meaningful intersection of healthcare and research."

## Strategic Insights for Drug Development

**Dacheng Liu, Highly Distinguished Therapeutic and Methodology Statistician, Boehringer Ingelheim**

"Attending this summit was a pleasure. It covered many AI applications, including systems with many agents. These systems could change how teams work together across different locations in clinical drug development. The event provided strategic insights and practical frameworks that I can apply in my work. Excited to be part of such a forward-thinking gathering."

## Real-World Impact of Academic Innovation

**Nigam H. Shah, Professor of Medicine at Stanford University and Chief Data Scientist for Stanford Healthcare**

"This collaboration between Accenture and Stanford combines real world experience with academic insight. Working together, we have the potential to deploy Stanford Medicine's innovations globally. I'm hopeful this collaboration will continue to grow and expand its impact."

## Inspiring Innovations in Clinical Trials

**CG Wang, Senior Director, Regeneron**

"This summit was enriching, covering both high-level healthcare challenges and technical topics like integrating large language models. The content was highly relevant to our clinical trials work, sparking ideas for future collaborations and innovations in trial design and analysis. Inspired and eager to connect with like-minded professionals."

## Accelerating Convergence with AI

**Sylvia K. Plevritis, PhD, Professor of Biomedical Data Science and of Radiology, and Chair of the Department of Biomedical Data Science, Stanford University**

"This summit was energizing and affirming. Our collaboration with Accenture on multimodal data integration has made significant progress. From AI-assisted tumor boards to ARPA-H initiatives and federated learning, the momentum is real. AI, especially agentic AI, is accelerating the convergence of life and clinical sciences, enhancing data-driven decision support."

Co-presented by Stanford DBDS & Accenture

# About Stanford Department of Biomedical Data Science

The Department of Biomedical Data Science (DBDS) is an academic research community of faculty, postdoctoral scholars, and graduate students with a shared mission to advance precision health by leveraging large, complex real-world data through the development and implementation of novel analytical tools and methods. DBDS merges the disciplines of biomedical informatics, biostatistics, computer science and advances in AI. The intersection of these disciplines is applied to challenging problems in healthcare and medicine using multi-modal data across the entire medical spectrum, including molecular, tissue, medical imaging, EHR, biosensory and population data.

DBDS consists of over sixty faculty and includes a graduate training program established more than four decades ago which presently has 147 PhD and MS graduate students. Alumni are leaders in many different sectors across academia, industry, and government, holding positions that are shaping the future of the field.

For more information, please check out: **https://dbds.stanford.edu/**

# About Accenture

Accenture is a leading global professional services company that helps the world's leading businesses, governments and other organizations build their digital core, optimize their operations, accelerate revenue growth and enhance citizen services—creating tangible value at speed and scale. We are a talent- and innovation-led company with approximately 799,000 people serving clients in more than 120 countries. Technology is at the core of change today, and we are one of the world's leaders in helping drive that change, with strong ecosystem relationships. We combine our strength in technology and leadership in cloud, data and AI with unmatched industry experience, functional expertise and global delivery capability. Our broad range of services, solutions and assets across Strategy & Consulting, Technology, Operations, Industry X and Song, together with our culture of shared success and commitment to creating 360° value, enable us to help our clients reinvent and build trusted, lasting relationships. We measure our success by the 360° value we create for our clients, each other, our shareholders, partners and communities.

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