[tile]DB

DESIGNED FOR DISCOVERY™

Customer Success eBook

Learn how leading biopharma companies are powering their unstructured multimodal data with TileDB.

Introduction

In the fast-paced world of **pharma and biotech**, the quest for **groundbreaking therapies** leads researchers to dive deep into the complexities of biology. With costs reaching a staggering $2.6 billion and the need for swift innovation heightened in the post-COVID era, R&D teams are exploring new modalities beyond traditional small molecules.

The key to unlocking these advancements lies in **mining multimodal data including multiomics**, which offers valuable insights but also presents challenges with its vast complexities and volumes.

That's where TileDB steps in – a purpose-built platform crafted to address these challenges head-on. By providing a unified space for all multiomics data, facilitating seamless collaboration, supporting interoperable analysis environments, and ensuring scalability, TileDB empowers pharma and biotech professionals to peer into the depths of biology with clarity.

In a landscape where cost and innovation pressures reign supreme, the integration of AI and ML technologies for drug and target discovery is not just an option but a crucial strategy. With TileDB leading the way, the journey towards revolutionary therapies becomes not just a distant hope but a tangible opportunity waiting to be seized.

In this eBook, you will find **success stories** of how some **of our key customers** have leveraged TileDB to solve their data challenges and march forward with AI-ready multi-modal data to drive precision medicine.

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Designed for Discovery

GOAL

Diagnose critical illness within hours in the NICU

CHALLENGES

N+1 problem
storage grows super linearly with the number of genomes

Computationally expensive
to add new sample VCFs to existing populations

OUTCOME

18% Improved newborn outcomes

Rady Children's Institute
Genomic Medicine®

SOLUTIONS

One single data management platform for just-in-time analysis of newly sequenced genomes from newborns in the NICU.

7 hrs CLINICAL TURNAROUND
Just mins to load & secs to query

97% COST REDUCTION
vs. file-based approaches

70 Hospitals
Data sharing & collaboration

GOAL

Drug and target discovery platform for cancer

by applying ML to single cell data amassed at scale

CHALLENGE

2M → 30M cells

Extreme single-cell dataset growth

OUTCOME

Phenomic AI **launched their scTx platform** to explore expression profiles to drive target discovery.

PHENOMIC AI

SOLUTIONS

SECURITY

Access controls

aligned with datasets, not files

TILEDB APIs

Efficient out-of-core computation

STORAGE & COMPUTE

Fast data access

in a single cloud solution

GOAL

Build an enterprise-wide multi-omics data mesh to drive AI initiatives

CHALLENGES

Deliver ML-ready genomics data within the company

Enterprise level **compliance, security & access control**

Ability to ingest, store & scale **up to 6 million samples/year** of analysis-ready variant data

Quest Diagnostics™

SOLUTIONS

26% STORAGE COST REDUCTION

of TileDB arrays on Amazon S3 compared to compressed VCF files on S3

N+1 PROBLEM SOLVED

Easily handled sample appends to VCF datasets

$0.01 COST EFFICIENT INGESTION

per sample for 24.000 samples/day

GOAL

Next-generation drug discovery

by applying ML to single cell data amassed at scale

CHALLENGE

33M cells and growing

without FAIR data practices

OUTCOME

Cellarity **achieved a single source of truth** for their single-cell data to power target discovery with greater efficiency and traceability.

Cellarity

SOLUTIONS

CATALOG

FAIR platform

for single-cell data to drive efficiency

PERFORMANCE

< 1 hour

vs days to build a single-cell atlas

STORAGE & COMPUTE

< 1 hour

to update single-cell catalogs
to newest standards of data

TileDB is a rare find — simply put, they offer thought and execution partnership across all aspects of multi-omics, speak the language of our end-users, and deliver a much simpler foundational data infrastructure, at the scale we wish to operate.

Quest Diagnostics™

Ray Veeraghavan

Global Head of Bioinformatics & Software

Shifting all of our data into TileDB enabled us to scale from hundreds of thousands of single cells to tens of millions, and so we got this enormous, unified repository of data that we can very quickly query to identify new exciting drug targets.

PHENOMIC AI

Sam Cooper

CTO and Co-Founder

Quest Diagnostics™ · Takeda · Rady Children's Institute Genomic Medicine® · In partnership with: Chan Zuckerberg Initiative · Boehringer Ingelheim · Cellarity · PHENOMIC AI · aws marketplace · Zifo

TileDB solved a very unique problem for us. TileDB has improved our computational performance and organizational efficiency. By reducing the data engineering burden, our ML and computational scientists can focus on the science.

Cellarity

Parul Bordia Doshi

Chief Data Officer

TileDB is allowing us now to do things that were hitherto not possible: It's not just a matter of running complex queries, it's a matter of running hundreds of concurrent complex queries on dramatically expanding genomic data, which is key for diagnostics in the NICU to guide the right treatments now and into the future with gene therapies.

Rady Children's Institute Genomic Medicine®

Dr. Stephen Kingsmore

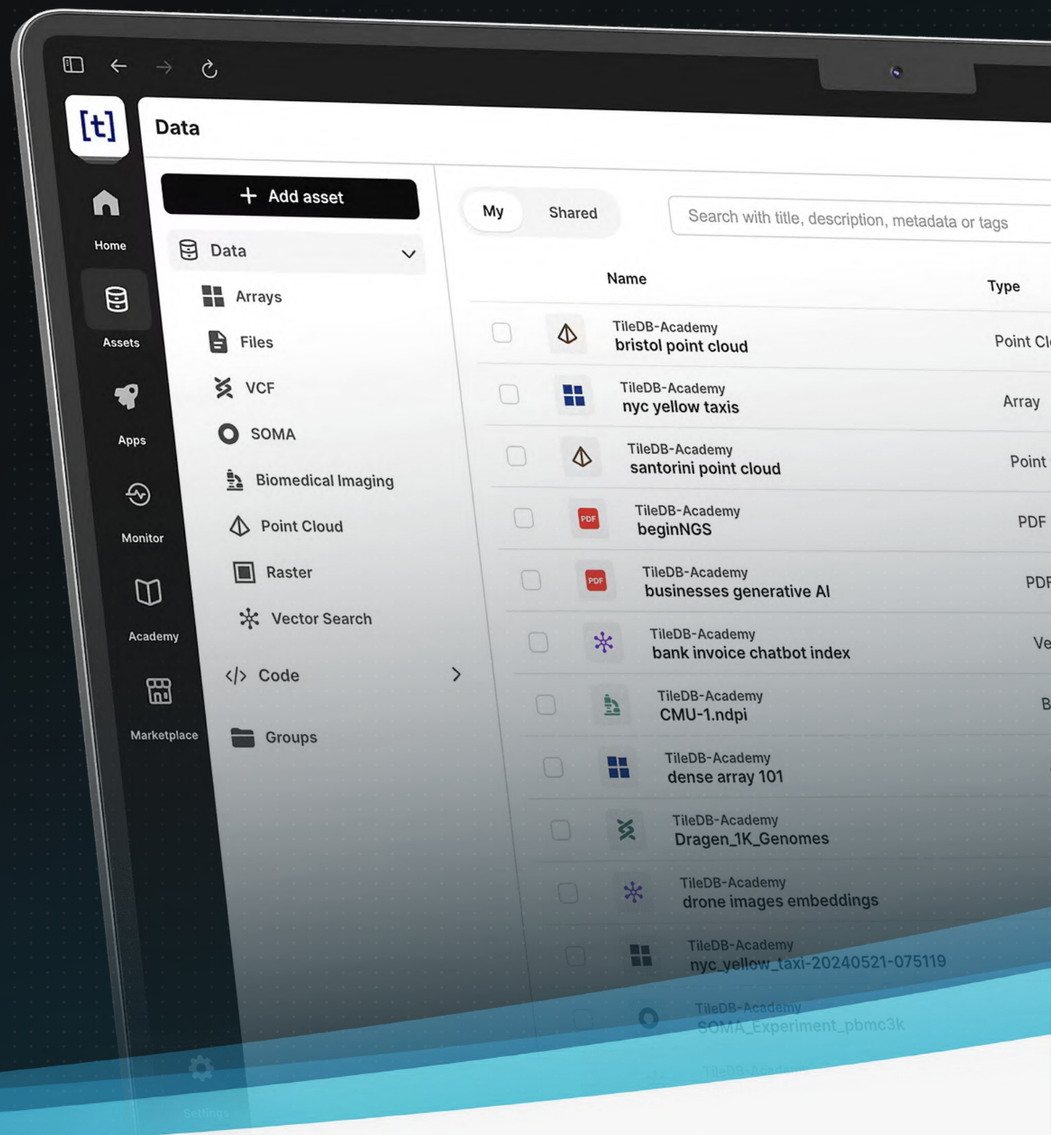
President and CEO

Quest Diagnostics™ · Takeda · Rady Children's Institute Genomic Medicine® · In partnership with: Chan Zuckerberg Initiative · Boehringer Ingelheim · Cellarity · PHENOMIC AI · aws marketplace · Zifo

Accelerate drug discovery with TileDB

For science and data teams in biopharma, who need to mine multimodal data for drug discovery, but currently deal with costs, complexity and data fragmentation, TileDB enables teams to catalog, collaborate on and analyze all their structured, semi-structured and unstructured data to accelerate drug and target discovery breakthroughs. TileDB handles complex unstructured data with ease using unique shape-shifting arrays, offers purpose-built life sciences solutions and provides native AI/ML capabilities with storage and compute that scale easily and cost effectively to drive discovery.

Schedule a discovery call →



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