Fartsicorn Foundation

Unicorns of cancer treatment, connected

Inspired by Mackenzie...

Mackenzie is never out of the fight. After being diagnosed with hepatoblastoma at age 5 in 2023, she has endured 1 liver transplant, 54 doses of chemotherapy, 45 surgeries/biopsies and 23 doses of radiation.

Despite this, Mackenzie just smiles all the time, and takes pleasure in brightening people's day. Her supporter base spans the continent of Australia.

Our Mission

The Everett family created the Foundation after navigating their daughter's cancer journey, driven by both hardship and the kindness shown by others.

The Fartsicorn Foundation now exists to ensure no family faces that fight alone. Our mission is to make life-saving knowledge and treatment options easier to find, understand, and act on.

We're building an AI-powered platform to connect global medical research and uncover treatment paths faster. We're also creating a practical knowledge base for families—and, in time, aim to support those needing to travel for urgent care.

The Founders

Steve Everett is known for his relentless drive. With a background in finance and law (B.Bus, QUT; LLB in progress), he now applies his skills to AI-powered data analytics—driving the Foundation's goal of beating cancer through smarter data and broader reach.

Kerrin Everett is a dedicated mum and carer, known for her calm presence and compassion. Since Mackenzie's diagnosis in 2023, she's navigated the medical system with determination—and brings added strength as a skilled graphic designer.

Samuel Everett – At just five years old, Sam is the heart of the Foundation's spirit. Always ready to help his dad with chores when Mum and Mackenzie are at the hospital, he brings joy, resilience, and the biggest smiles to everyone he meets—**all in support of his big sister.**

Three Central Pillars

Connecting Cancer Research

- **Currently medical research is Highly decentralized**: Over 4,600 global cancer research funders; duplication is common due to poor coordination.

- **Access costs have exploded**: Journal subscriptions rose over 1,000% since the 1980s; >$40K/year for institutions.

- **Up to 85% of medical research is avoidable or redundant**: Costing $170B+ annually.

- **Millions of published research papers impossible to rationalise by human means**

Knowledge Base for Families

- **Centralised information hub**: Offers families clear, accessible information on global treatment options and research.

- **Inform decision-making**: Helps families explore care pathways that may complement local hospital guidance.

- **Augments clinical care**: Empowers collaboration between families and healthcare teams through broader awareness of available expertise.

Facilitation and Funding

- **Facilitates access beyond borders**: Guides families in identifying and connecting with international hospitals when needed.
- **Navigation and logistics support**: Provides tools and resources to help manage referrals, travel, and communication with overseas providers.
- **Provide funding support where possible.**

OncoMap Ai

Connecting Cancer Research Unicorns

Fragmented Knowledge Limits Progress

- **Paediatric cancers are rare and complex,** with subtypes like hepatoblastoma affecting 1,500–2,000 children annually[1]
- **Research is growing but scattered** — **>3 million biomedical articles are published annually[2]**, siloed across specialties, journals, and countries.
- **Important mechanistic insights,** like shared genetic pathways (e.g. Wnt, TERT, CTNNB1), often go unnoticed across tumour types due to disconnected reporting[3].
- **Semantic AI can link related concepts buried in text** (e.g. trials, mutations, mechanisms) to surface insights that traditional keyword searches miss.
- **Decentralised publishing and skyrocketing access costs** makes review and ingestion of developing research impossible.
- *"Without accessible and usable reports, research cannot help patients and their clinicians."*

[1]Guo, C., Liu, Z., Zhang, X. *et al.* Global, regional, and national epidemiology of hepatoblastoma in children from 1990 to 2021: a trend analysis. *Hepatol Int* 19, 156–165 (2025). https://doi.org/10.1007/s12072-024-10750-x.
[2]Larivière et al., PLoS ONE (2015) – https://doi.org/10.1371/journal.pone.0127502.
[3]Akiki et al., Cancer Reports (2023) – Global trends in oncology research 2010–2019
[4]Glasziou & Chalmers, The Lancet (2009) – Avoidable waste in research

# Connecting millions of text blocks though vector indexing
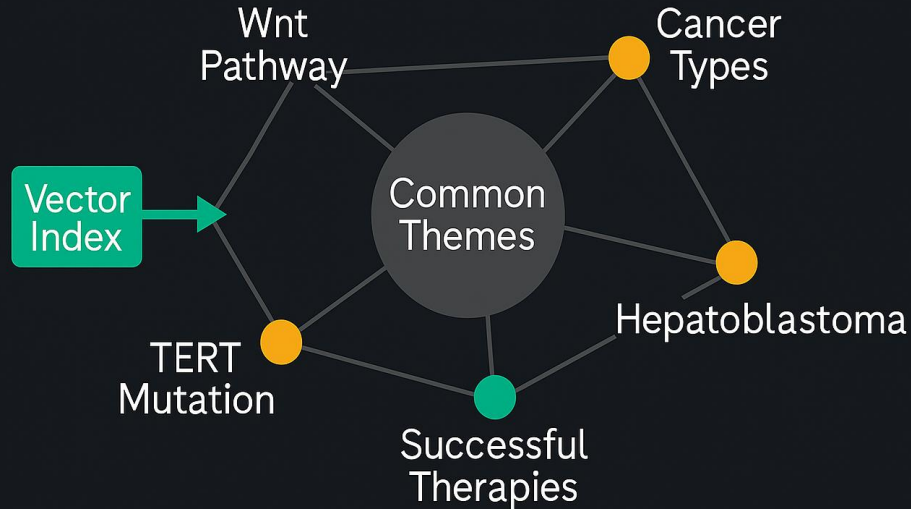
- AI models can process vast **amounts of text** at extraordinary speed — ~12,000 words per minute on standard hardware, and **up to 168,000 words per minute when run on high-performance computing infrastructure.**

- **Using vector indexing,** these models assign numerical coordinates to words and phrases, placing them in a high-dimensional space **where semantic similarity can be identified with precision.**

- This enables the discovery of **hidden relationships between concepts** that are often **too subtle or dispersed for humans to detect** through traditional reading or search methods.

Semantic Intelligence for Biomedical Breakthroughs

By connecting thematically related content — **even across unrelated diseases or research domains** — AI can **surface therapeutic strategies, mechanisms, or biomarkers** that might inform the development of more effective treatments, **including for refractory or treatment-resistant cancer cells**.

Example
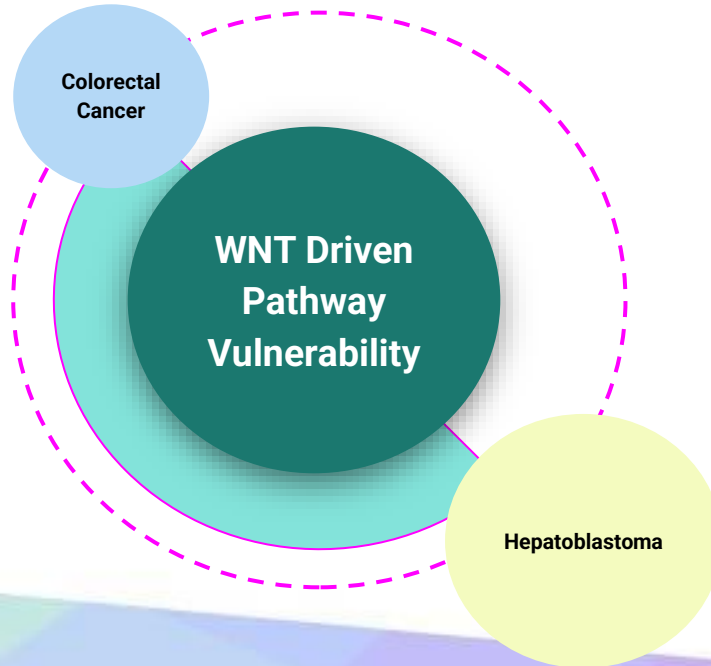
Search thousands of articles using various methods

Keyword Filtering

Search all concepts: [   ] Category: All Entities

☐ Medications
☐ Diseases & Disorders
☐ Therapeutic Procedures
☐ Biological Structures
☐ Symptoms
☐ Clinical Events
☐ Lab Values
☐ Dosage
☐ Time / Duration
☐ Diagnostic Procedures
☐ Other

Role of CTNNB1 in Pediatric Liver Tumors
Diseases: | Hepatoblastoma | Mutation: CTNNB1
Procedure: Liver Transplant
Medication: Cisplatin

TERT Mutations in Rare Cancers
Diseases: Liver Cancer
Clinical Event: Recurrence | Immunotherapy
Time: 5-Year Survival

Semantic Search

effective treatments for refractory hepatoblastoma 🔍

§ RESULTS › PAGE 23
Several effective treatments for refractory hepatoblastoma have been developed, including targeted therapy with small molecule inhibitors.

§ METHODS › PAGE 42
A small RNA molecule trargeting the Wnt signaling pathway was explored as a potential treatment for relapsed hepatoblastoma.

§ CONCLUSIONS › PAGE 8
Immunotherapy appears to be a promising option for

Retrieval Augmented Response

What treatments are showing promise for refractory hepatoblastoma?

Small-molecule inhibitors targeting the Wnt signaling pathway have shown promise as treetments for refractory hepatoblastoma.
Johnson et al. 2023
View Paper

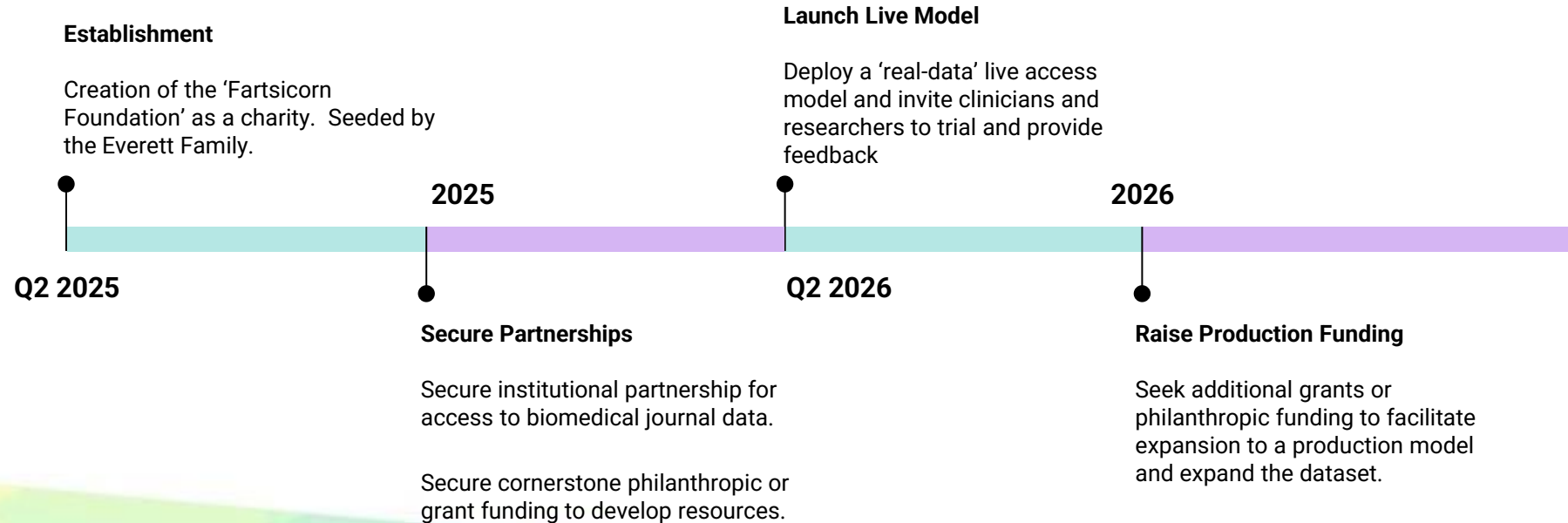Journal of Experimental Oncology

Small–Molecule Inhibitors of the Wnt Signaling Pathway as Therapy for Refractory Hepatoblastoma

*The above are mock responses from the development model

Challenges

1. **Source Data** - Access to high-quality biomedical literature. However, licensing costs for databases — such as Elsevier's ScienceDirect — can range from $50,000 to $250,000 per year for private organisations.

2. **Contextual Guidance** - While the AI model **has the capacity to uncover novel connections and propose treatment pathways**, its **effectiveness increases when guided by domain expertise**. Clinicians and researchers operating at the forefront of care are uniquely positioned to identify gaps in existing literature and **help shape focused, high-impact discovery pathways**.

3. **Funding** - The project is currently self-funded. Fartsicorn Foundation has been established to pursue philanthropic grants and institutional partnerships. Collaboration with recognised research organisations will be instrumental in both enhancing credibility and enabling access to broader datasets and funding channels.

Timeline

Establishment

Creation of the 'Fartsicorn Foundation' as a charity. Seeded by the Everett Family.

Launch Live Model

Deploy a 'real-data' live access model and invite clinicians and researchers to trial and provide feedback

2025

2026

Q2 2025

Q2 2026

Secure Partnerships

Secure institutional partnership for access to biomedical journal data.

Secure cornerstone philanthropic or grant funding to develop resources.

Raise Production Funding

Seek additional grants or philanthropic funding to facilitate expansion to a production model and expand the dataset.

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