

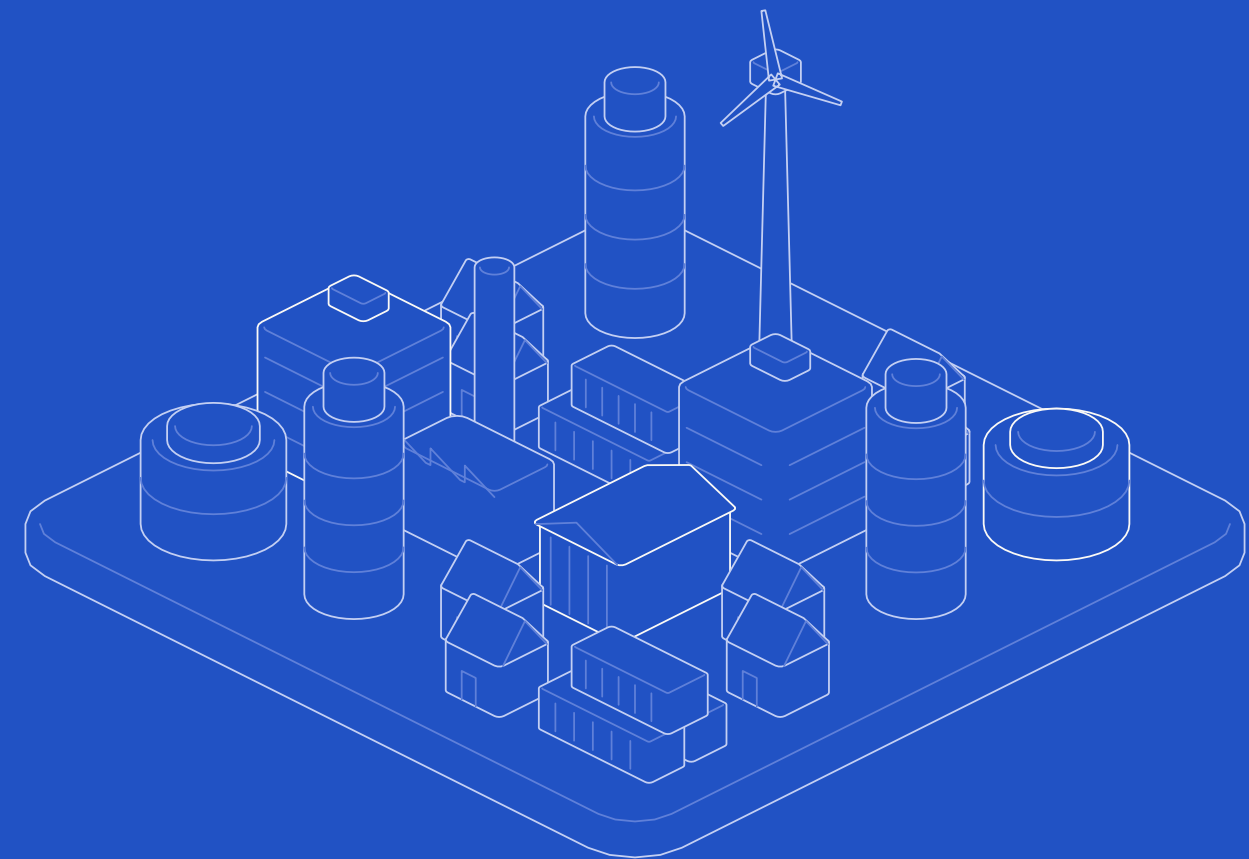
What if interest rates collapsed?

What if energy prices doubled?

What if the stock market fell thirty percent?

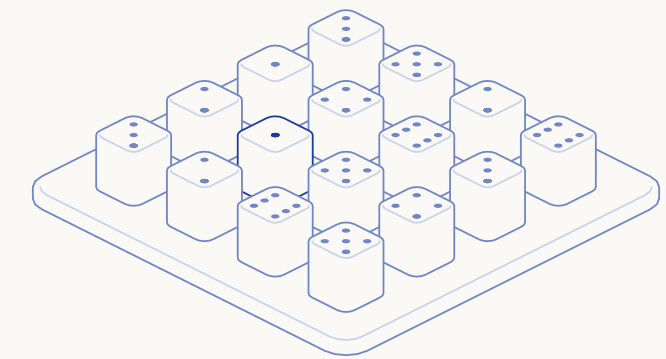
What if all three happened at once?

Aksel Fristrup, Founder of Henselian
Builds systems from the mathematics up



THE PROBLEM

When asking another question costs too much, you stop asking.



01

Insurers, banks and energy traders answer what-ifs with Monte Carlo simulation: millions of possible futures, each rolled out.

02

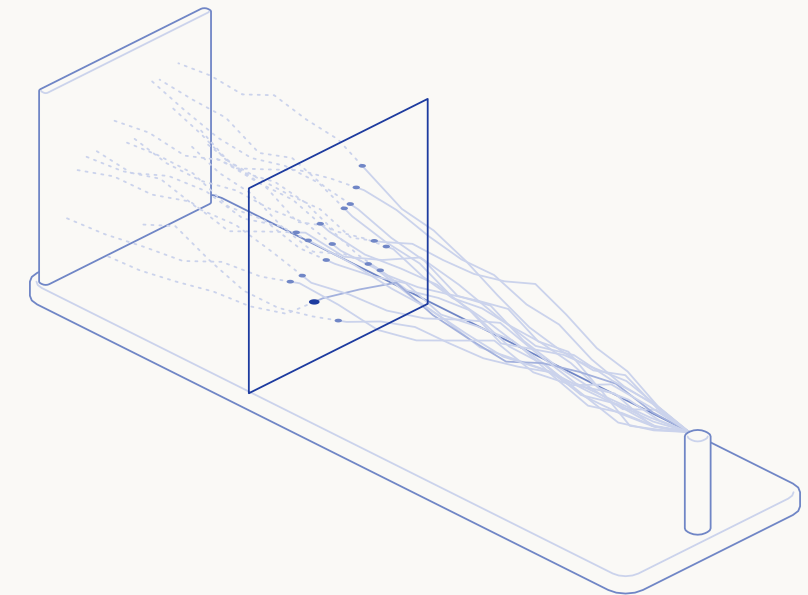
A full run takes hours or days. So the scenarios are agreed in advance, and seldom changed.

03

The combined shock, the new product, the question asked in the meeting: they wait for the next run, or never get one.

THE SOLUTION

A simulation engine fast enough to ask again.



01

The engine

Monte Carlo on the GPU. Every member, loan or delivery day simulated on every path, with no model points.

02

The language

Hensel, the engine's own language. Models read like the mathematics and compile to the GPU.

03

The app

Build a model in plain words, prove a migrated model agrees with the old one, and put each decision on record.

MEASURED, NOT CLAIMED

Trillions of simulated paths. In seconds.

41s

1.5 trillion member-paths: a 2.5-million-member UK buy-in priced on 600,000 paths, end to end.

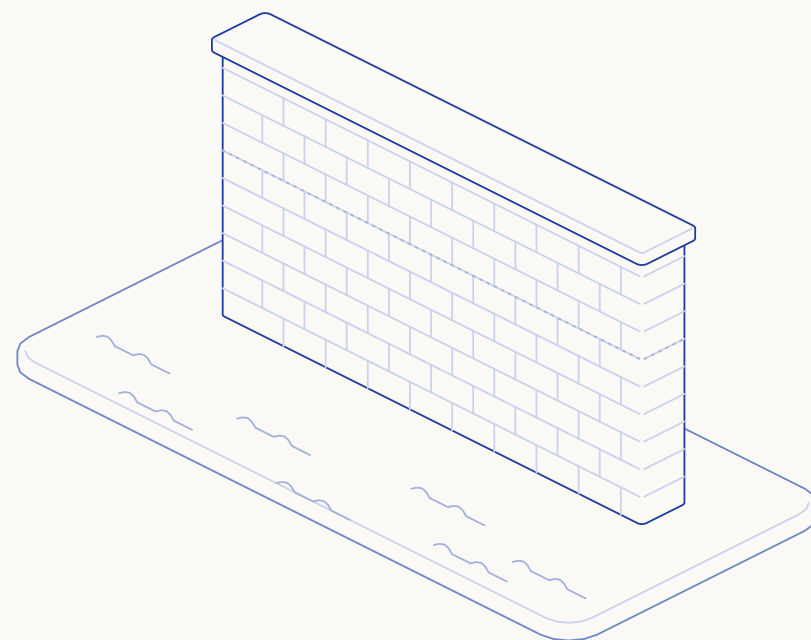
28,000x

faster than the Society of Actuaries' published reference on its nested variable-annuity benchmark.

Both measured on one machine with one NVIDIA RTX 4090. The buy-in is a synthetic scheme on an illustrative basis. The SOA benchmark in μ s per policy-scenario: 789.7 for its vectorised NumPy reference, 0.0283 for Henselian.

FROM WHAT IF TO WHAT THEN

It is not just about asking what if. It is about answering what then.



What then should we

protect?

The seven points of coverage still standing above the early warning.

change?

The inflation exposure. Hedged, coverage climbs back above 180%.

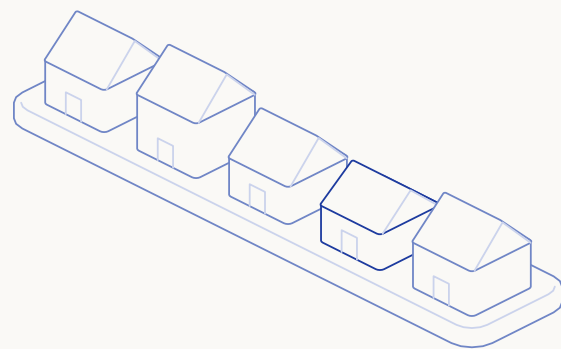
do today?

Decide with the cost in front of you, and put the decision on record.

Illustrative example, not a forecast. The wall above the sea is the surplus.

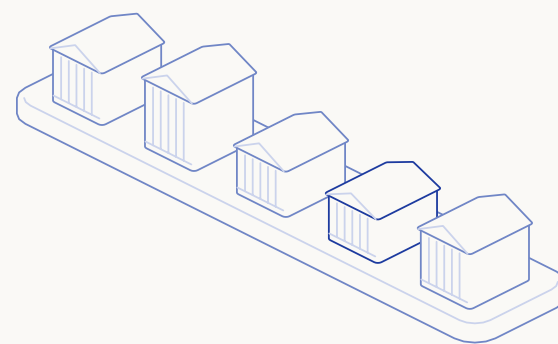
WHERE IT APPLIES

One engine. Three industries.



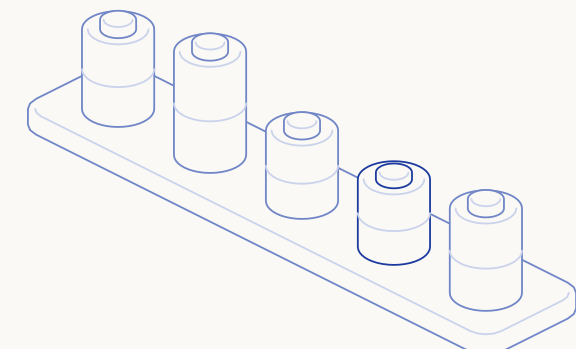
INSURANCE

What if inflation surges through every claim?



BANKING

What if markets move together?



ENERGY

What if prices swing unexpectedly?

WHERE WE ARE TODAY

The product is built. Now we are arranging the first pilots.



BUILT

Engine, language and app

Measured at full size on one GPU, for insurance, banking and energy.



NOW

Arranging the first pilots

With teams that have a simulation problem they wish they could solve faster.



NEXT

Pilots on real problems

Run first on a synthetic book shaped like theirs, then on their own data.

WHAT WE'RE LOOKING FOR

Design partners to pilot. And introductions.



An insurer, bank or energy firm with a simulation problem it wishes it could solve faster. A pilot goes:

01

We read it

02

We model it

03

We run it with you

Introductions to the people who own these questions: actuarial, risk, treasury and trading leads.

Bring us a problem: aksel@henselian.com

The greatest danger isn't always the scenario you calculated and got wrong.

Sometimes, it's the scenario you never had time to calculate.

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