GeoMet AI | Resource Modelling

The days of kriging, grid drilling, and implicit modelling are behind us. GeoMet AI delivers a new proven estimation paradigm that yields more ore tonnes and higher grade while requiring less grade control drilling.

Know your mine. Deliver more profit.

GeoMet AI Team

Luke Ashford-Hodges: Resource Geologist
BSc Geology, MBA(Technology)

+10yrs in resource geology

David First: Chief Geologist
BSc (Hon) Royal School of Mines, Imperial College

+35yrs of mineral exploration experience

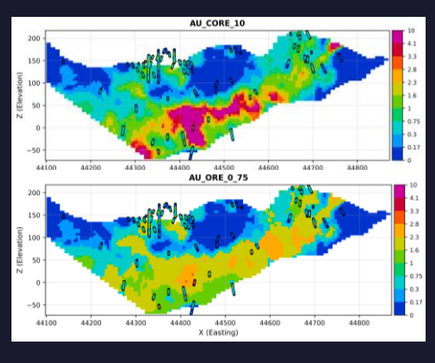
Max Briggs: Chief Metallurgist
BEng(Met), GradDip(AppFin), FAusIMM, GAICD

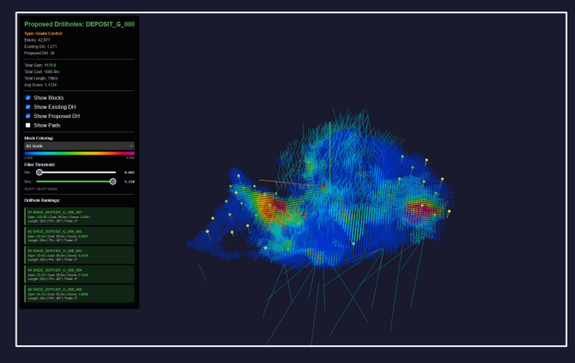
+25 years in Metallurgy

Marko Huang: Chief Scientist
PhD CS, University of Toronto - AI Matter (Quantum Chemistry) Lab, BaAS(Eng)

Technology | GAUGE System (Geomet AI Universal Geospatial Estimator)

GAUGE creates a high accuracy 4-part interlinked continuous resource estimation designed for reporting, drilling, mine planning, and ore control.





- GAUGE Drilling Platform:

  Reduce meters and increase conversion by drilling for information **gain**.

GAUGE Resource Modelling Suite

#1 GAUGE CORE: This estimate learns from the entire orebody. It is optimized for local accuracy (defines ore domains) and global reliability for contained metal at all cutoff grades. This is the R&R model, the ore domain model, and model for cutoff sensitivity analysis.

#2 GAUGE ORE: Using the CORE domains, GAUGE generates a smoothed ore estimator that achieves exceptional mill reconciliation for a given cutoff grade.

#3 GAUGE ORE CONF: GAUGE ore confidence model predicts the probability of a certain block being ore.

#4 GAUGE ORE GAIN: Derivative of confidence model. It is the information that can be gained from drilling a zone to a tight spacing. The GAIN model guides **grade control, resource conversion** and **life extension drilling** through the GAUGE drilling platform.

GeoMet Business Case Example (Epithermal Gold Operation)

We expect GAUGE to deliver comparable economics to every Au, Ag, Cu, Zn, Li operator.

Ore Control
The fastest return-on-investment is using the GAUGE system for ore control. GAUGE models reconcile a **6.5% higher grade** at grade control spacing in ore volumes of matching size in 2025 mining. Realized over a year, this is ~**$13M/yr in gross profit** for a $200M operation.

Drilling
Life Extension. GAUGE's reliable spacing estimation and grade control platform identifies gain zones expected to hold **1100koz** with 30% average conversion rate where waste currently estimated.
Grade Control. GAUGE requires **22-28%** less grade control drilling by being a more reliable estimator and guiding drilling based on information **gain**.

Mine Panning
Reduced mill reconciliation error by **38%** and identified **18%** more ore volumes for grade control drilling that reconciled at identical precision to Kriging ensuring minimum ore is left behind.

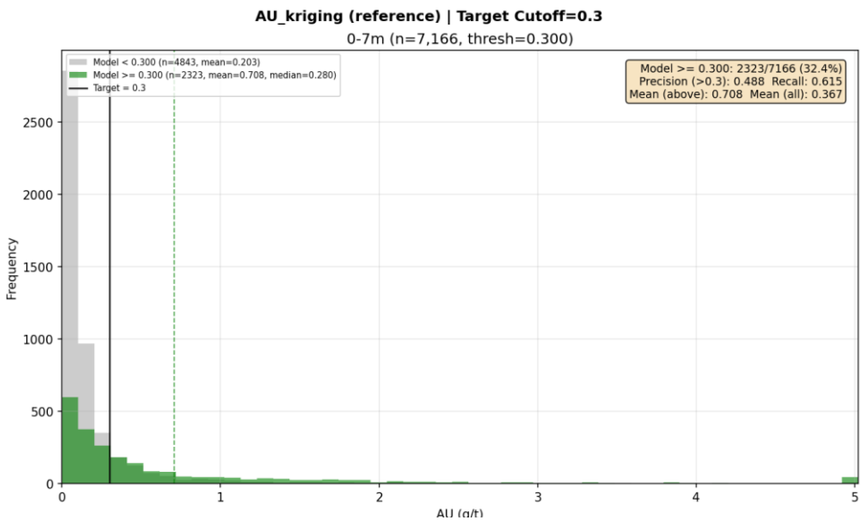
*$200M/yr production operation, economics expected to scale proportional to yearly production and mining selectivity. This operation is a 2:1 strip ratio.

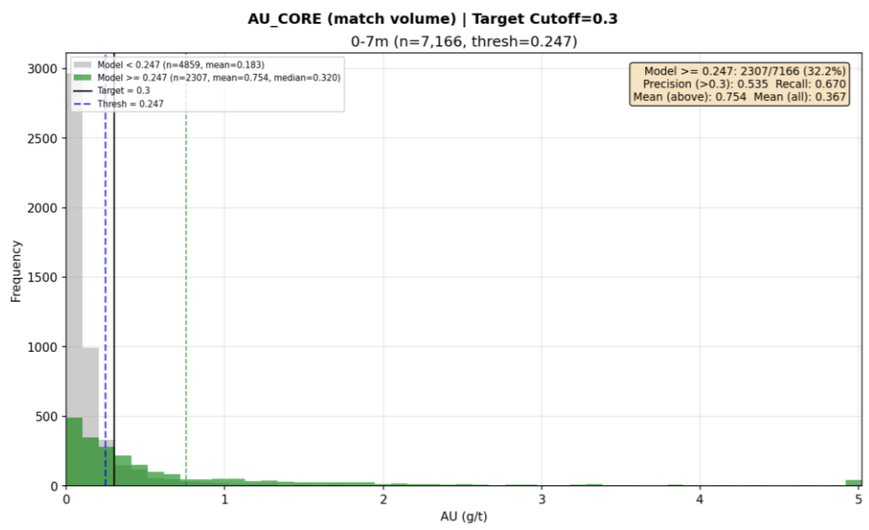
GeoMet AI | Resource Modelling – Case Study

GEOMET AI

Epithermal gold operation with 0.3g/T cutoff, 2:1 strip ratio, Australian operator, 12yr LOM

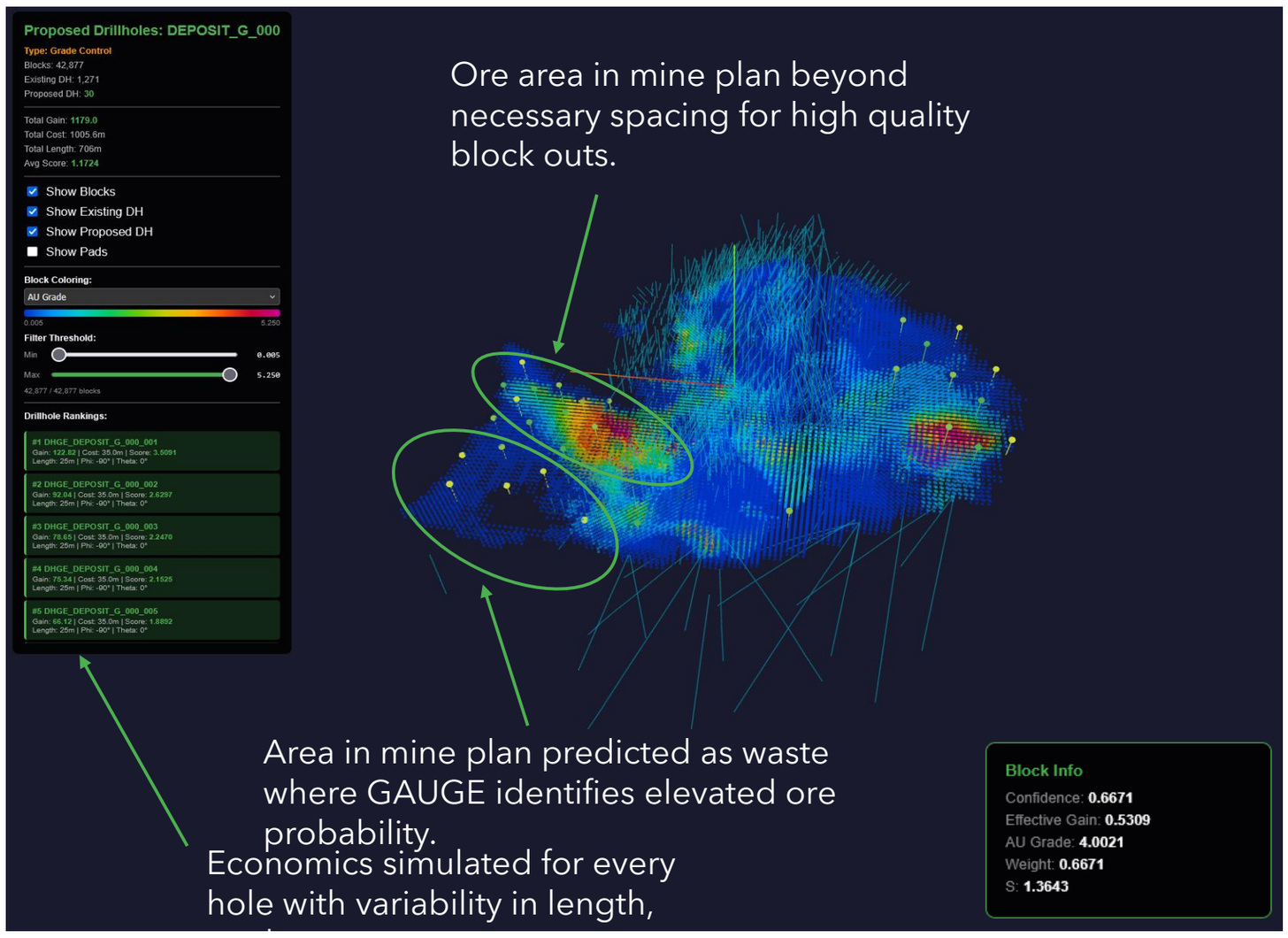
Ore Control with GAUGE:





The fastest return-on-investment is using the GAUGE system for ore control. GAUGE models reconciled a **6.5% higher grade** at grade control spacing in ore zones of matching size in 2025 mining volumes.

Alternatively, if targeting throughput, reconciled the same head grade with **10.1% more tonnes**.



Drilling with GAUGE:

Program Settings:

1. Life Extension
Drilling that maximizes **gain** in blocks estimated with R&R model as waste.

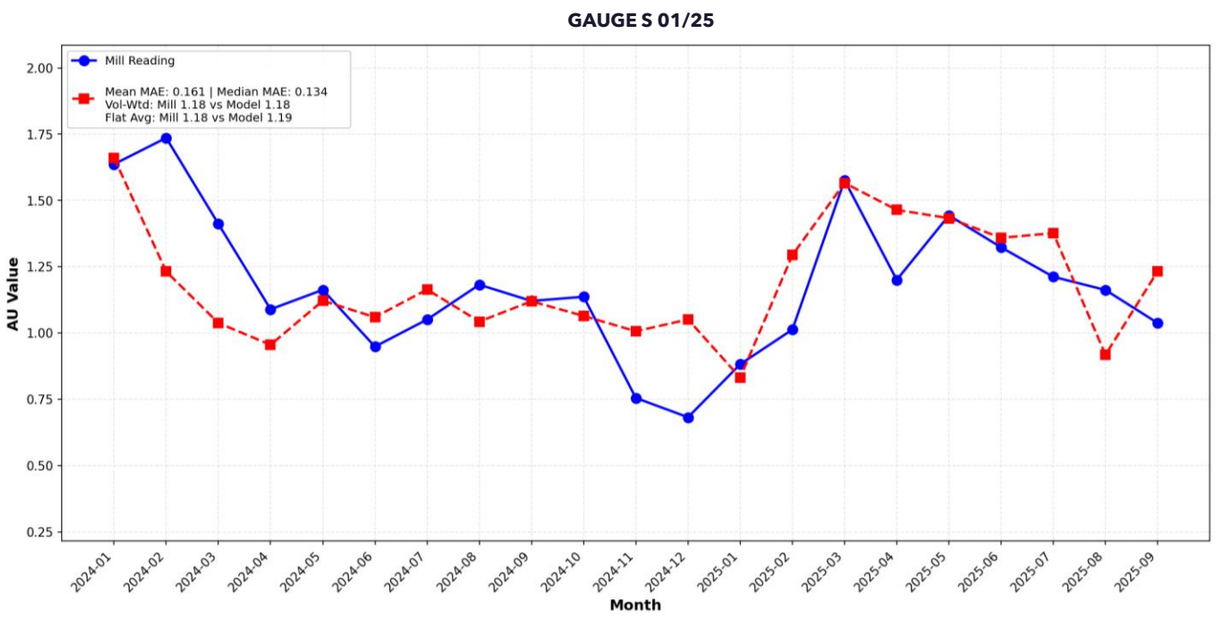
2. Grade Control & Definition
Drilling that maximizes **gain** from blocks in a selected sector.

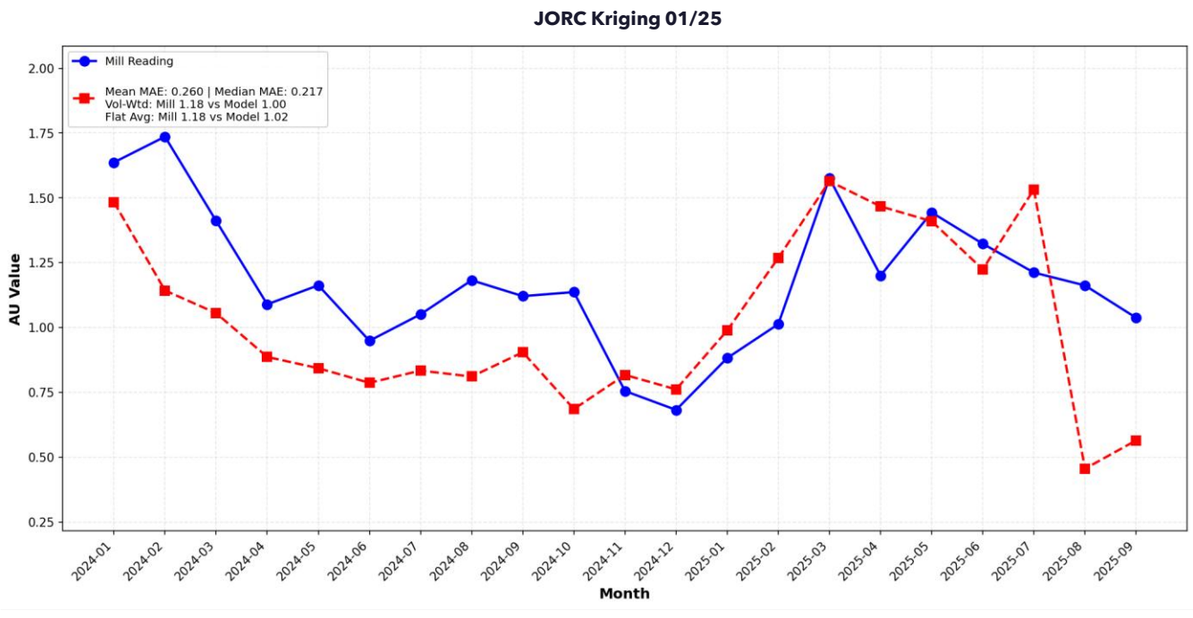
3. Blue-Sky Drilling
Drilling that maximizes **gain** conditional on assumption that any block has equal probability of being mineralized.

Drilling cost (pad setup, meters) as well as block accessibility (distance from surface) is considered by the drillhole selection algorithm.

Expected result is resource conversion with **22-28%** less holes without adverse reconciliation effects.

Mine Planning with GAUGE:





GAUGE reduced mill reconciliation error by **38%** and identified **18%** more ore volumes for grade control drilling that reconciled at identical precision to Kriging ensuring minimum ore is left behind.

Working with GeoMet AI

GAUGE will deliver comparable operational improvements across these use cases for all Au, Ag, Cu, Zn, and Li open pit and underground operations. We produce operation ready models within two weeks of initial data delivery and models subsequently update within one day through the platform.

Full length case study available upon request. Contact team@geomet.ai.