# ML-Based Research Tool for Mining Industry Investors

A US$[300]K seed investment opportunity

NUGGETMINE

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# Executive Summary

## Market Opportunity

1. *Information intensity*: massive information transparency on new projects driven by the exchange and regulators
2. *High fixed costs:* research effort is not covered by revenue from modest capital raises / trading activity
3. *Technology progress*: technology for parsing PDFs and detailed geological data in public domain is widely available
4. *Resource deficit*: increasing interest in new projects due to years of underinvestment and recent geopolitical shifts

All of the above creates an opportunity to set up a low-cost technology based automated research tool to be useful for all stakeholders in the market: investors, brokers, projects

# Executive Summary

## Market size

- Over 1300 listed Canadian mineral E&P companies with 5000+ projects[1], with thousands more companies having gone through the exchange with the information trail on SEDAR|SEDI
- Annual update on resource and reserves, expected and actual economics, requiring a regular analysis refresher
- Australia offers 1000+ more companies (phase II of roll-out). Potential to expand into oil & gas projects as well also there
- Many more private projects may want to use the tool to benchmark themselves against listed ones (or acquired | delisted)
- Thousands of investors searching for the next 'big thing' requiring a tool for projects to help sieve through the flow

*Source*: https://www.osc.ca/sites/default/files/pdfs/irps/ni_20180307_43-101_mineral-disclosure.pdf

# Executive Summary

## Proposed model

- ***Resource***: benchmarking resource reports based on varying cut-offs, metal prices, pit and metallurgy assumptions, etc.
- ***Address play***: project location relative to Tier I projects and other juniors in the vicinity and/or geological similarity
- ***Red flags***: Potential red flags in the 43-101 report (or suspiciously absent), from geological, metallurgical and logistics perspectives
- ***Insiders***: insider track record across companies / time, including amounts of capital raised, successful exits, price appreciation, etc.
- ***Best practice***: identifying similarities across projects to suggest lessons from previously (un)successful projects elsewhere
- ***Development***: comparing expectations in reports vs actual results as projects mature from resource to PEA to PFS to BFS

# EXECUTIVE SUMMARY

## Detailed Example: Address Play

- Training an AI/ML model based on geological data:

*Model Inputs:*

- Rock types in the area
- Drilling results and grades information from 43-101
- Information on neighbour projects or similar geology projects elsewhere (drawn from the internal database built by parsing 43-101 data)
- Satellite geophysics imagery
- User uploaded information on geophysics (later stages)

*Model Outputs:*

- Classification of the project into one of the three groups: promising, need more data, risky
- Highlighting project risks
  - If requested, detailed model output in terms of risks
- List of neighbors and the most similar projects elsewhere

# EXECUTIVE SUMMARY

## Monetization Opportunities

The overarching idea is to structure the same database in way to be able to sell it in varying detail to different end users.

- ***Subscription***: monthly analysis on new projects or updates
- ***One-off Use***: detailed research report on a specific project
- ***Deep-Dive***: detailed research report on a specific mineral
- ***Benchmarking***: similarities for a privately held project
- **Economics**: similar projects' path to success / failure
- ***Financials***: benchmarking of discovery and SG&A costs
- ***People***: service to check insiders' track record
- ***Featured Reports***: regular reports originated internally

# Executive Summary

## Current Status

| | |
|---|---|
| Identifying core team and advisors | Done |
| Parsing PDF files to extract quality table and text data | Done |
| Identifying project coordinates to map on a map | Done |
| Conversion into standard coordinate system | Done |
| Linking insiders to companies and building their track record | Done |
| Retrieving basic stock and company information for specific dates | Done |
| Extracting all tickers for metals & mining companies from TSX | Done |
| Negotiating API solution for SEDAR and SEDI data | Done |
| Building scalable server architecture and the database of projects | Next |
| Mapping onto high resolution geological maps with rock types | In progress |
| Building benchmarking tool to compare projects | Next |
| Extracting financial information to benchmark discovery costs | Next |

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## Team in place

- ***Founder***: Vladimir Pakhomov, a London based entrepreneur and investor with significant experience in the early-stage exploration sector. Prior to 2022 was a board member of TSXV listed exploration companies. A track record of investing in several resource focused projects, including gold, copper, PMG, cobalt, etc.
- ***Data Science***: [TBA], a world class data scientist and software developer with background from multi spectral geo spatial analysis up to fast geophysical modeling by numerical calculation of computer vision algorithms. Extensive experience in inverse modeling of gravity, magnetic, and thermal fields.
- ***Geology***: [TBA], a geologist with extensive exploration and mineral discovery experience in the FSU, including Russia, Kazakhstan, Kyrgyzstan and Uzbekistan, as well as internationally in Australia, Mongolia, China, Canada, and several European countries. Held the position of Exploration Manager for Europe and FSU for a major international gold producer. Previously worked with and consulted companies such as BHP-Billiton, Norilsk Nickel, Goldcorp, Rio Tinto, World Bank and Inco.