

GeoRisk AI

An Agentic Geospatial AI Chatbot for Autonomous Multi-Domain Urban Risk Analysis

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Data Science Capstone Project
Town+Gown: NYC @ DDC Project Controls



Problem Statement

NYC's urban risk data is scattered across dozens of datasets—and nowhere in one place. Project managers must manually reconcile information stored in various geospatial units leading to slow project reviews, inconsistent risk assessments, and additional operational friction.

Our Solution

GeoRisk AI, autonomous geospatial AI agent that turns natural language queries into relevant, meaningful risk summaries:

what is the asbestos history like at columbia university

Based on the Asbestos Control Program data, the records we found pertain specifically to **Barnard College** at 600 West 116th Street, which is located directly across from Columbia University's main campus.

Between 2018 and 2022, Barnard College had several asbestos abatement projects filed and closed. These included the removal of:

VAT and Mastic (vinyl asbestos tile and mastic) from various apartments.

Pipe Insulation from specific apartment areas.

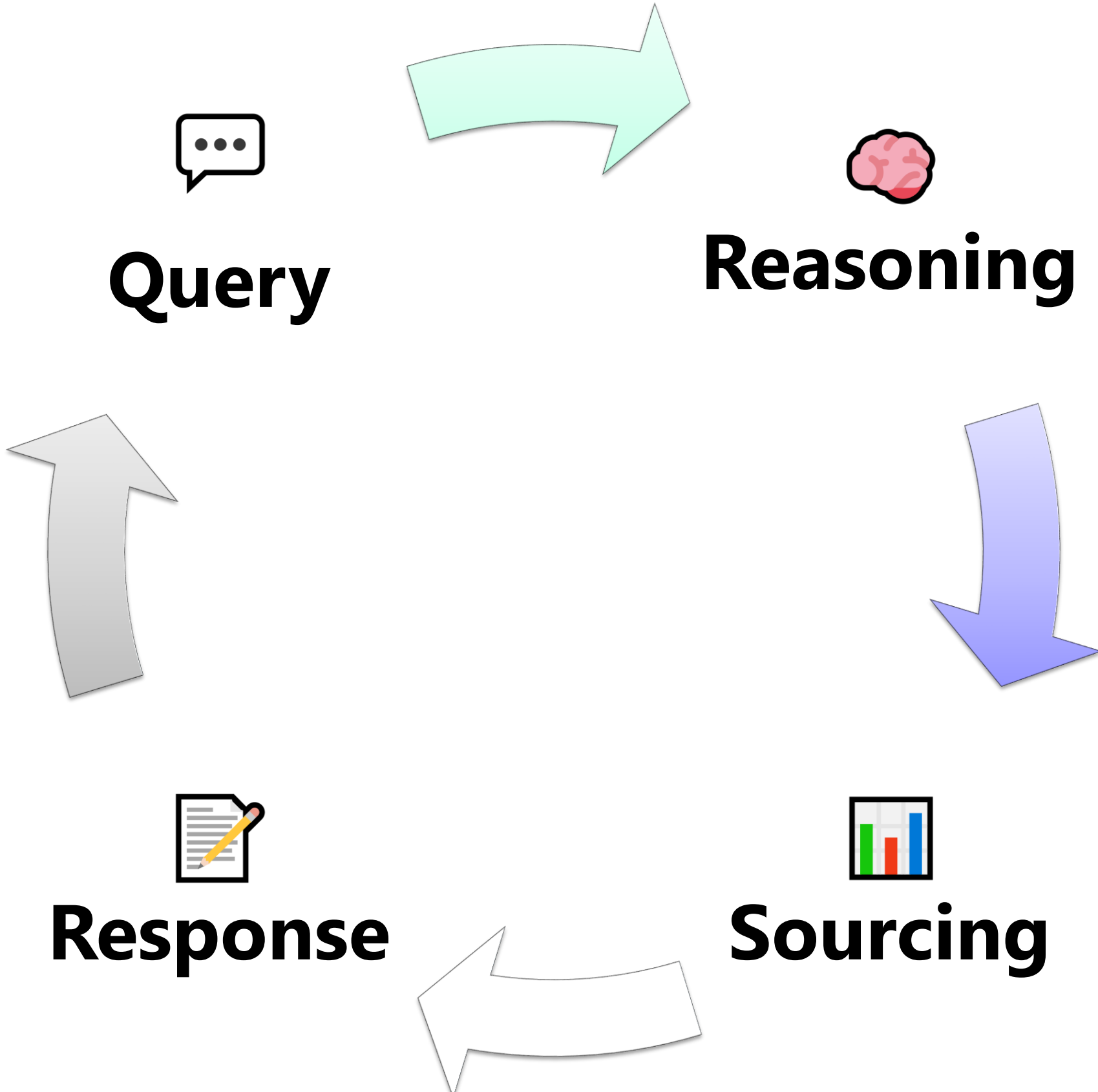
Roofing Material from the roof drain area.

While Barnard College is a close affiliate and neighbor, no direct asbestos abatement records were found for the specific tax lots associated with Columbia University's main campus at 116th Street and Broadway in this dataset.

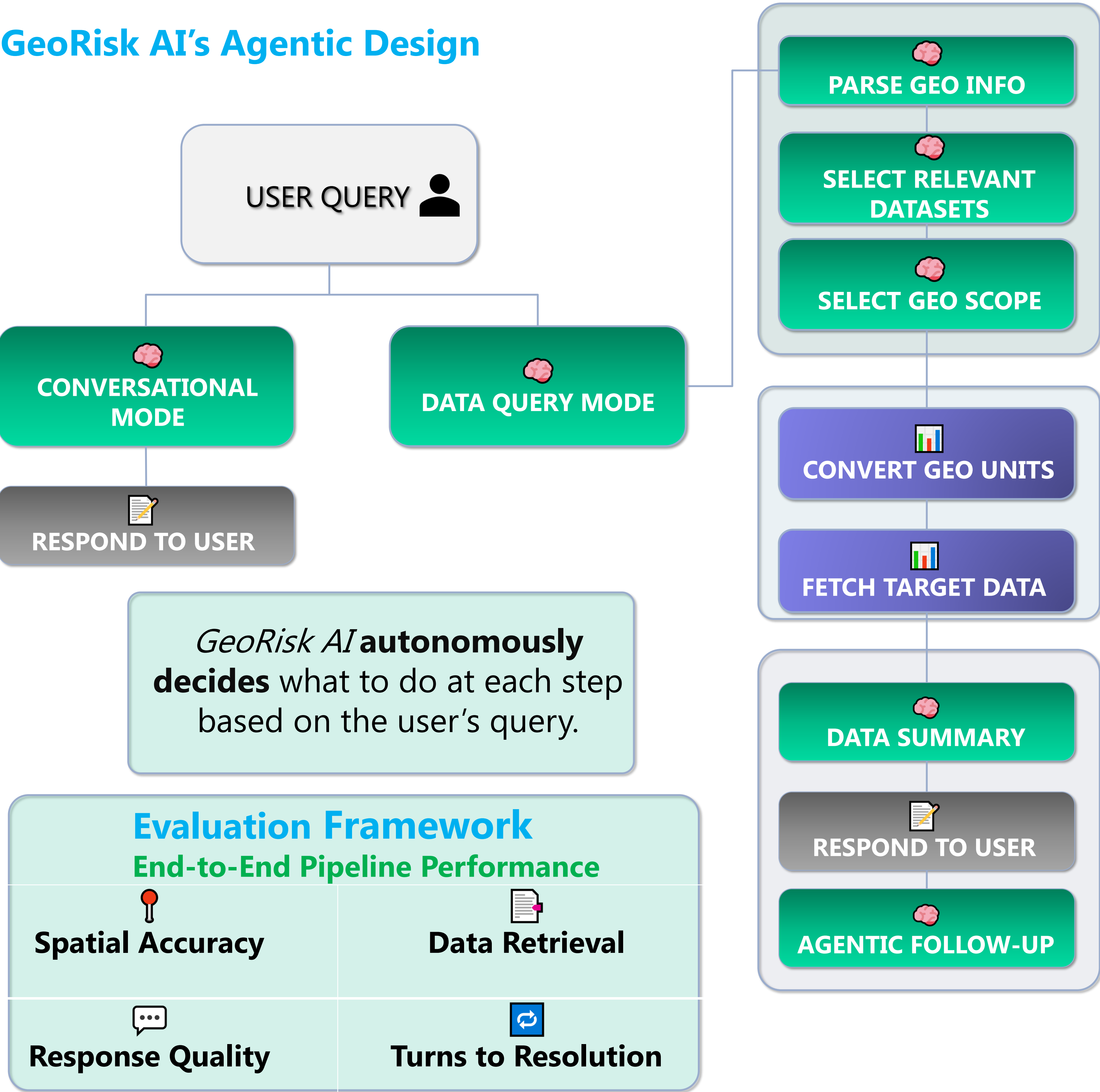
Type your message here...

GeoRisk AI's Features

✓ Autonomous Query Parsing	✓ Dynamic Dataset Selection
✓ Contextual Memory	✓ Clear Risk Insights
✓ Adaptive Spatial Awareness	✓ Self-Directed Data Retrieval
✓ Human-Like Follow-Ups	✓ Modern Chatbot UI



GeoRisk AI's Agentic Design



Takeaways

By shifting from manual lookup to agentic decision-making, GeoRisk AI shows that autonomous systems can independently interpret human queries, select and join relevant data, and generate actionable urban risk insights with minimal human effort.

Acknowledgments

Generative AI tools (ChatGPT) were used for phrasing and clarity in accordance with course policy; all analysis and conclusions are our own. We thank Town+Gown: NYC @ DDC for their guidance and support.

References

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