

HOL3468 - OCI GenAI: Leveraging Generative AI Models to Label and Standardize Text Data

Terminology Standardization Across Industries

A Universal Challenge

Finance

Product names: "High-Yield Savings Account" vs. "Premium Investor Savings"

E-commerce

Product categorization: "Men's Outerwear" vs. "Jackets & Coats"

Attribute naming: "Color" vs. "Colour" vs. "Hue"

Manufacturing

Part nomenclature: "Bolt, hex head, 3/8-16 x 1" vs. "3/8" Hex Bolt"

Common Thread

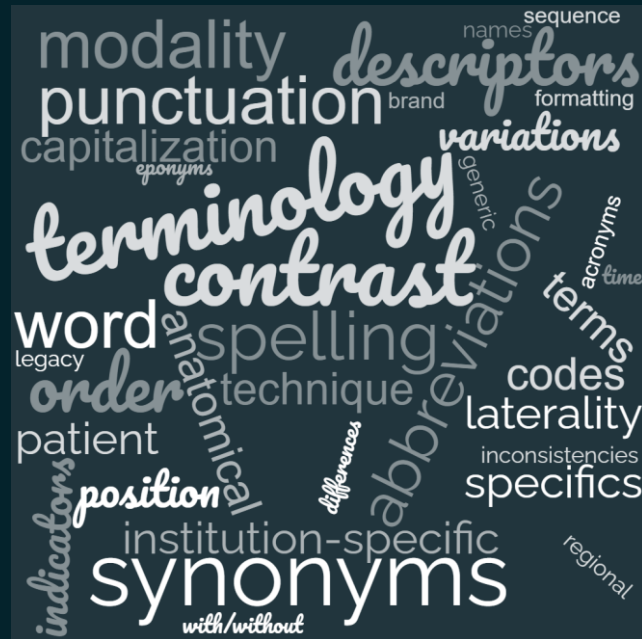
Inconsistent terminology hinders:

- Data aggregation, analysis, and algorithms
- System interoperability
- Efficiency in cross-organizational processes

A Closer Look at Healthcare

Mapping Non-Standard to Standard Terminology in Healthcare

- Variability across organizations, facilities, even devices
- Critical for data interoperability, analysis, and billing
- Standardized lexicons or ontologies exist, but mapping a term can be a complex process



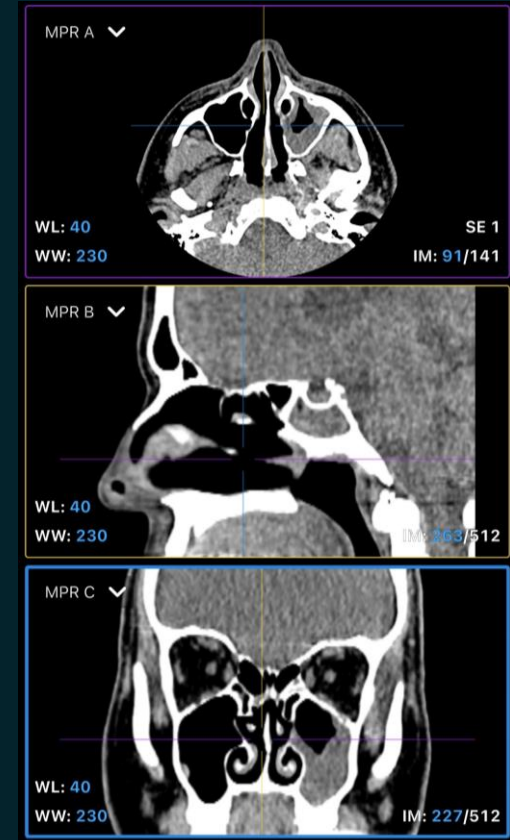
A Specific Challenge

Variability in Radiology Protocol Names

- Different organizations use diverse naming conventions
- Examples:
 - "CT Sinus W/O Contrast"
 - "Computed Tomography of Paranasal Sinuses"
 - "Non-contrast Sinus CT"

Need for Standardization

- Data aggregation for research and quality improvement
- Radiation dose monitoring via registries
- Seamless health information exchange



Solution - Generative AI for Terminology Mapping

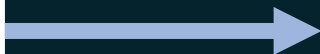
What is Generative AI?

- AI systems that can generate new content based on patterns in training data
- Can understand context and nuances in language(s)

Application in Healthcare Terminology

- Maps non-standard terms to standardized lexicons (e.g., LOINC, RADLEX)
- Learns from vast amounts of medical text and existing mappings
- Continuously improves with more data and feedback

CT head and sinus W/O



00029 CT paranasal sinus without IV contrast

Process and Benefits

How Generative AI Performs Mapping

- Analyzes input text (e.g., radiology protocol name)
- Identifies key concepts and modifiers
- Matches to most appropriate standardized term
- Provides confidence score and alternative options

Advantages

- Faster and more scalable than manual mapping
- More flexible than rule-based systems
- Handles variations and new terms effectively
- Improves consistency across organizations

Potential Real-world Impact and Conclusion

Improved Data Interoperability

- Facilitates accurate data aggregation and analysis
- Enhances research capabilities and population health management

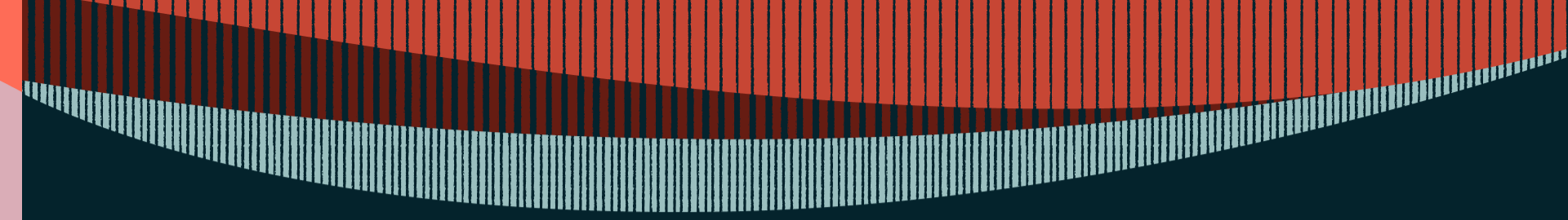
Enhanced Patient Safety and Care Quality

- Helps improve accuracy of tracking of radiation exposure across providers
- Enables consistent tracking of diagnostic quality

Future Directions

- Expansion to other medical domains (lab tests, medications)
- Integration with electronic health records for real-time mapping





Generative AI can be a powerful tool for
standardizing terminology, particularly in healthcare
- ultimately supporting better patient care and more
effective health systems.

Thank you!

LiveLab

Overview and Highlights

Get Started

Setup

Mapping terms using the chat interface

Automation with notebooks

Need Help?

