

# **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

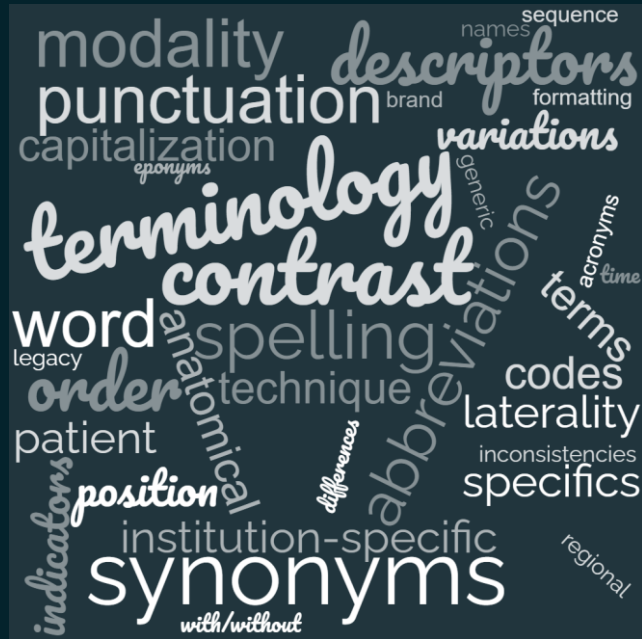
Inconsistent terminology hinders:

- 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



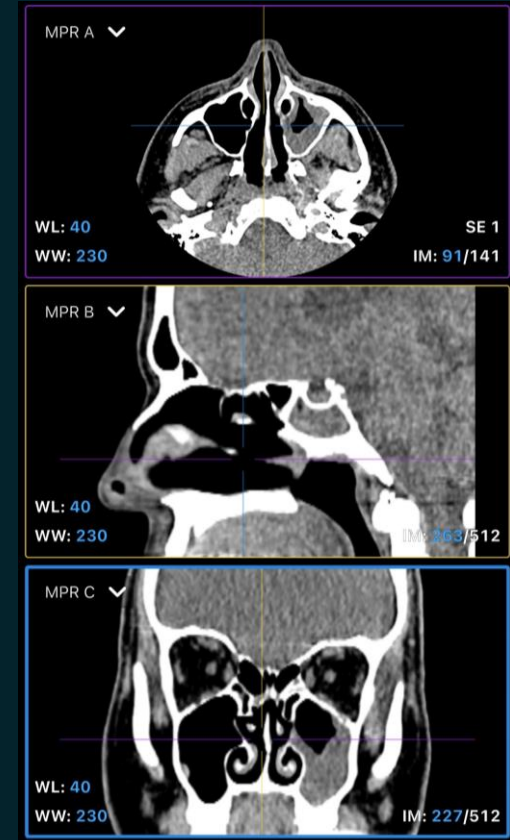
# A Specific Challenge

## 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

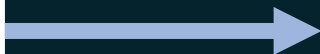
## What is Generative AI?

- 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

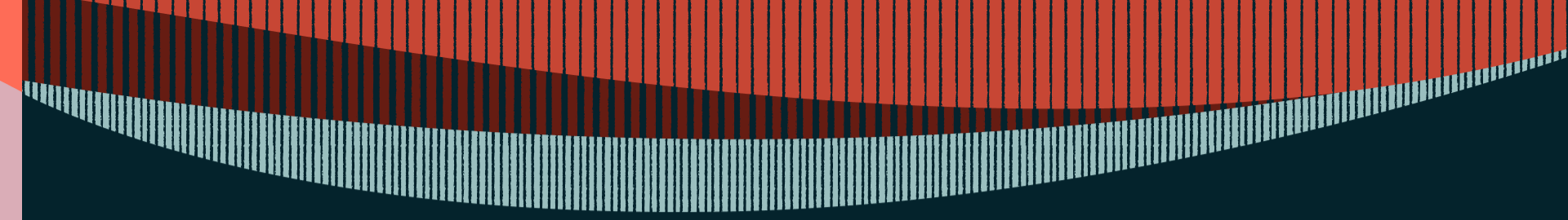
## Enhanced Patient Safety and Care Quality

- 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?

