

# Leveraging pretrained NLP models and generative AI to analyze parliamentary bills and questions, classify intent patterns, detect response evasion, and surface legislative stories and accountability gaps

## Parliamentary Intelligence Agent

### INTRODUCTION

- The official parliament website contains ample data stored in different formats such as pdf, audio and video. However, it difficult to navigate, and data submissions are often delayed thus slowing down reporting.

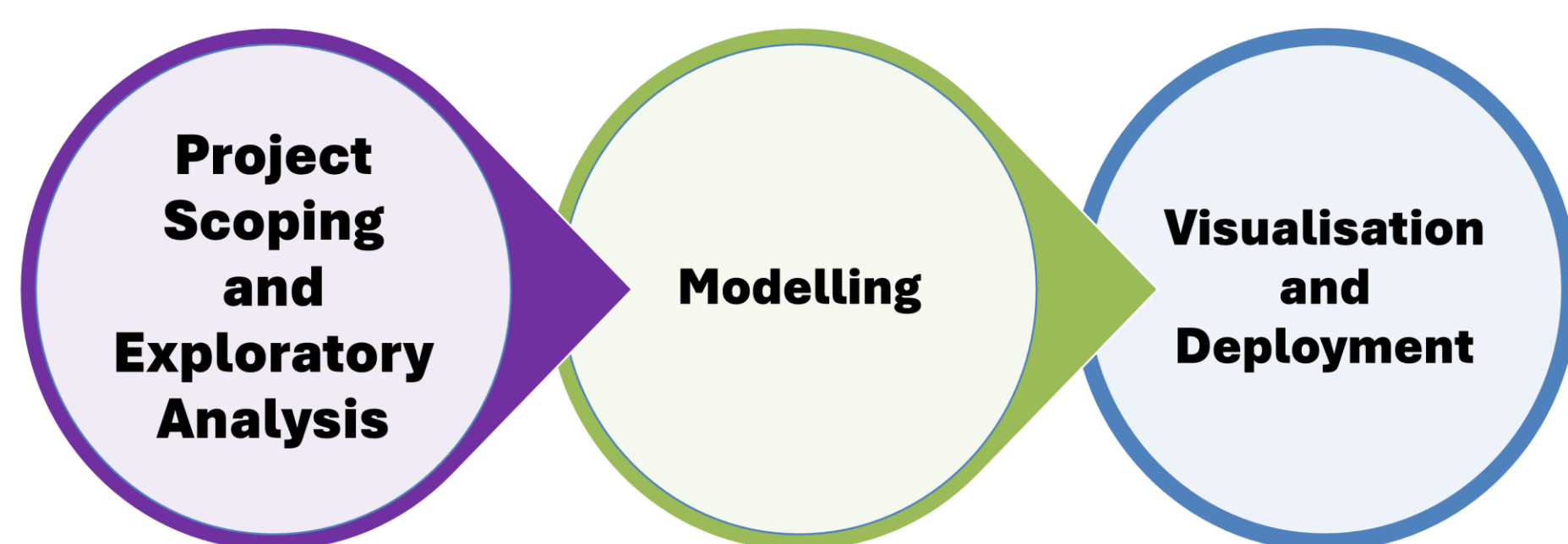
### PROBLEM STATEMENT

- While the Parliamentary Monitoring Group (PMG) have successfully centralized and structured SA parliamentary data, making it publicly accessible, a secondary crisis persists: **The data exists, but remains difficult to analyze at scale.**

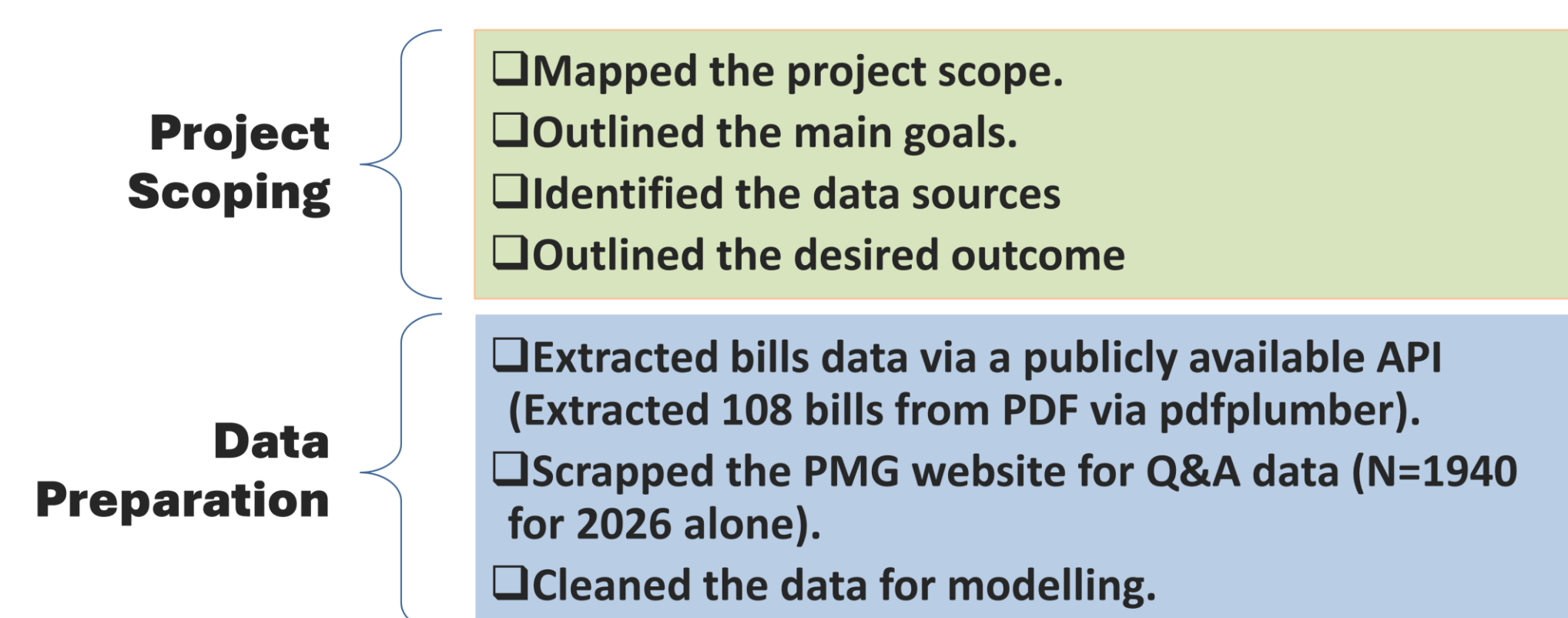
### AIM

- The project aims to produce an AI agent tool that leverages pretrained NLP models and generative AI to analyze parliamentary bills and questions, classify intent patterns, detect response evasion, and surface legislative stories and accountability gaps.

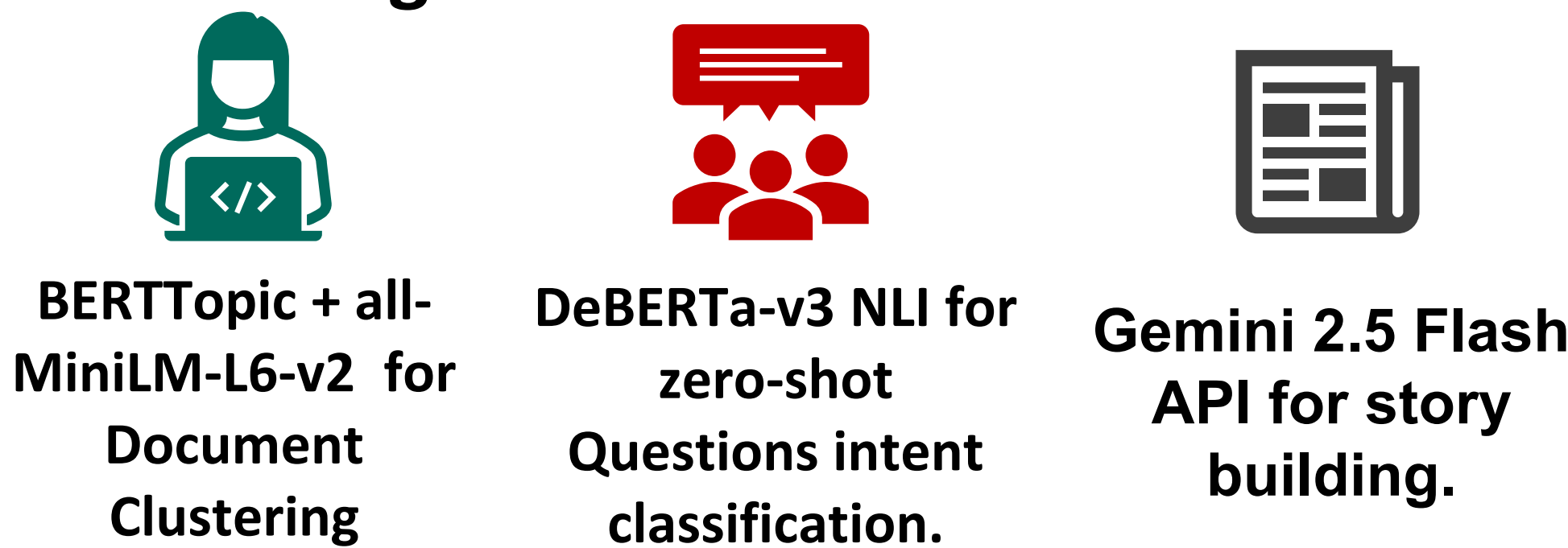
### Methods



### 1. Project Scoping and Exploratory Analysis



### 2. Modelling



### 3. RESULTS AND DISCUSSION

**Topic Modelling**

- The BERTopic model demonstrated strong interpretability, achieving a mean Umass coherence score of **0.6567** across 10 topics, and an average keyword uniqueness of **92%**.
- Interactive bubble chart visualization enabled rapid topic filtering and multi-document selection without manual tagging.

**2. Intent Classification**

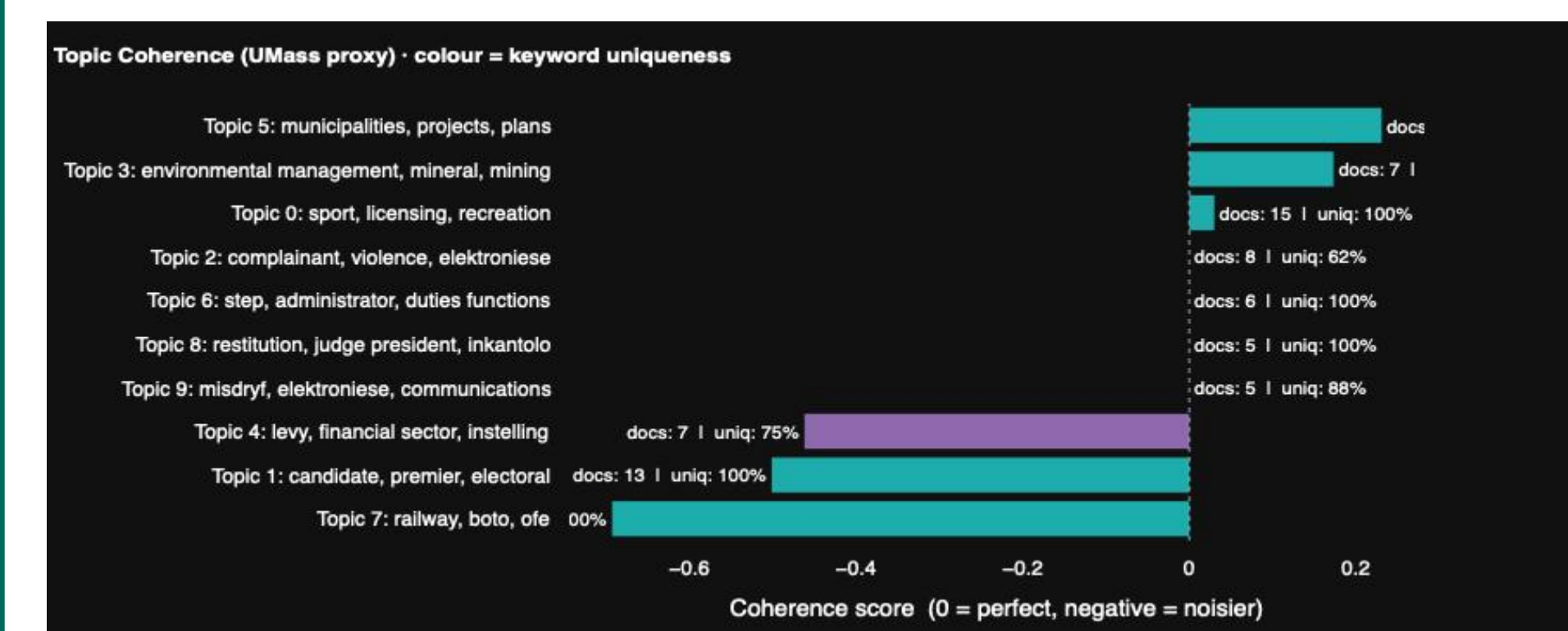
- Across 2 020 Q&A entries, intent distribution: policy clarification: 1,238(61.3%), fact-finding: 143 (7.1%), accountability probe: 611 (30.2%), procedural: 27 (1.3%) and political attack: 1 (0.0%).

**DISCUSSION**

- Given the unsupervised nature of the modelling approach, conventional performance metrics are not directly applicable, and human interpretation of outputs remains essential. The system is explicitly positioned as a tool to support decision making rather than automate it.
- A human in the loop approach can be applied to the intent classification component to assist in making more accurate classifications by taking a supervised learning approach.

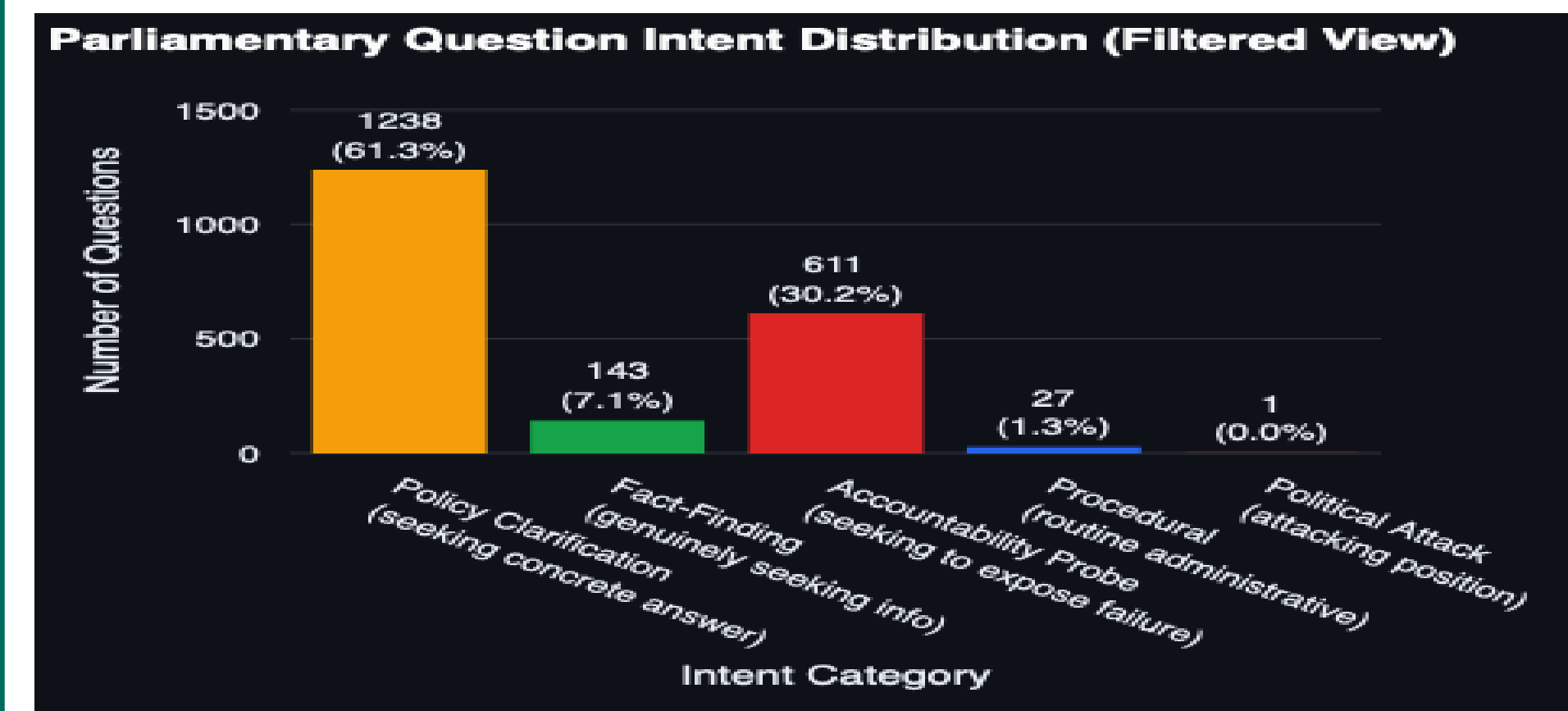
### VISUALISATION

#### Topic Modeling

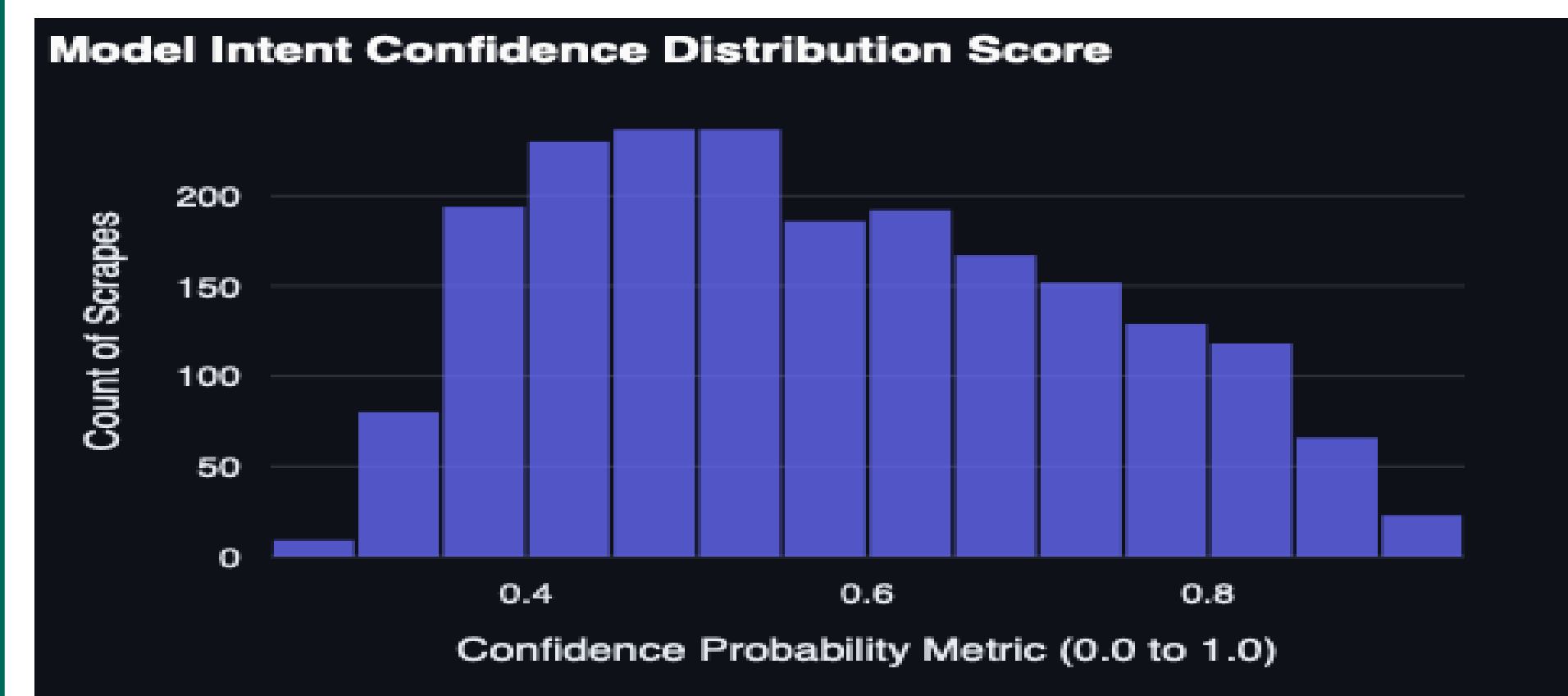


Topic Coherence: Values close to 0 are best; large negative values indicate noisy topics. Keyword uniqueness (bar colour) shows what fraction of a topic's keywords are exclusive to that topic—higher = more distinctive.

#### Intent Analysis Distribution



Analysis was done over sample size of 2 020 Q&A for 2026 only



The mean confidence score across the question was 57.5%

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SCAN ME

