

The advertisement features a dark blue background with dynamic, light blue and white geometric shapes. On the left, a woman with curly hair is shown holding a white coffee cup and a smartphone. On the right, a man is smiling while leaning against a counter. In the top right corner, there is a close-up of a white coffee cup filled with espresso, surrounded by coffee beans. In the bottom left corner, a pair of hands is shown holding several red coffee cherries. The Lavazza logo is prominently displayed in the center, with the text 'TORINO, ITALIA, 1895' underneath it.

LAVAZZA

TORINO, ITALIA, 1895

Lavazza Project



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Project Value Proposition



For **marketers** seeking deeper **insights** on product launches, our **analytics software** transforms raw online comments and reviews into **actionable metrics**.



Project Goal



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Developing an **application software** in order to understand the **real impact of a product launch**, in terms of **consumers sentiment** crossing social media **comments** and third-party **reviews**.



Data Overview



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Data sources:

- Wonderflow
- Digimining
- Instagram and Youtube



Data Overview



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568

Comments

0%

Labelled
Comments

72

Tiny Eco
Comments

4960

Reviews

95%

Labelled
Reviews

130

Tiny Eco
Reviews

Unbalanced and not fully labelled dataset



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Research questions



Can **Large Language Models** be used to extract useful insights from customer comments and reviews to improve marketing strategies?

In particular:

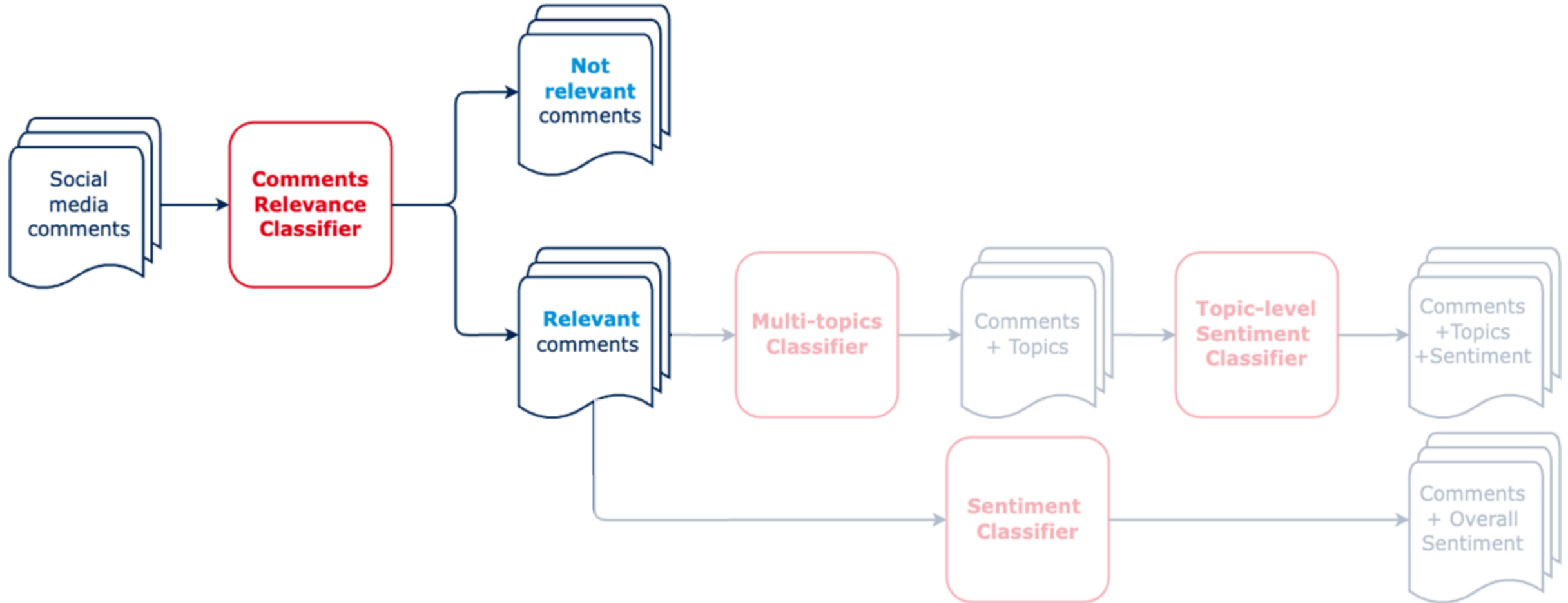
1. How effectively can **LLMs** identify **product-relevant comments**?
2. To what extent can **LLMs** extract specific **product aspects** from reviews and social media comments?
3. How accurate are **LLMs** as **sentiment classifiers** when analyzing product-related aspects?



Classification Pipelines - Comments

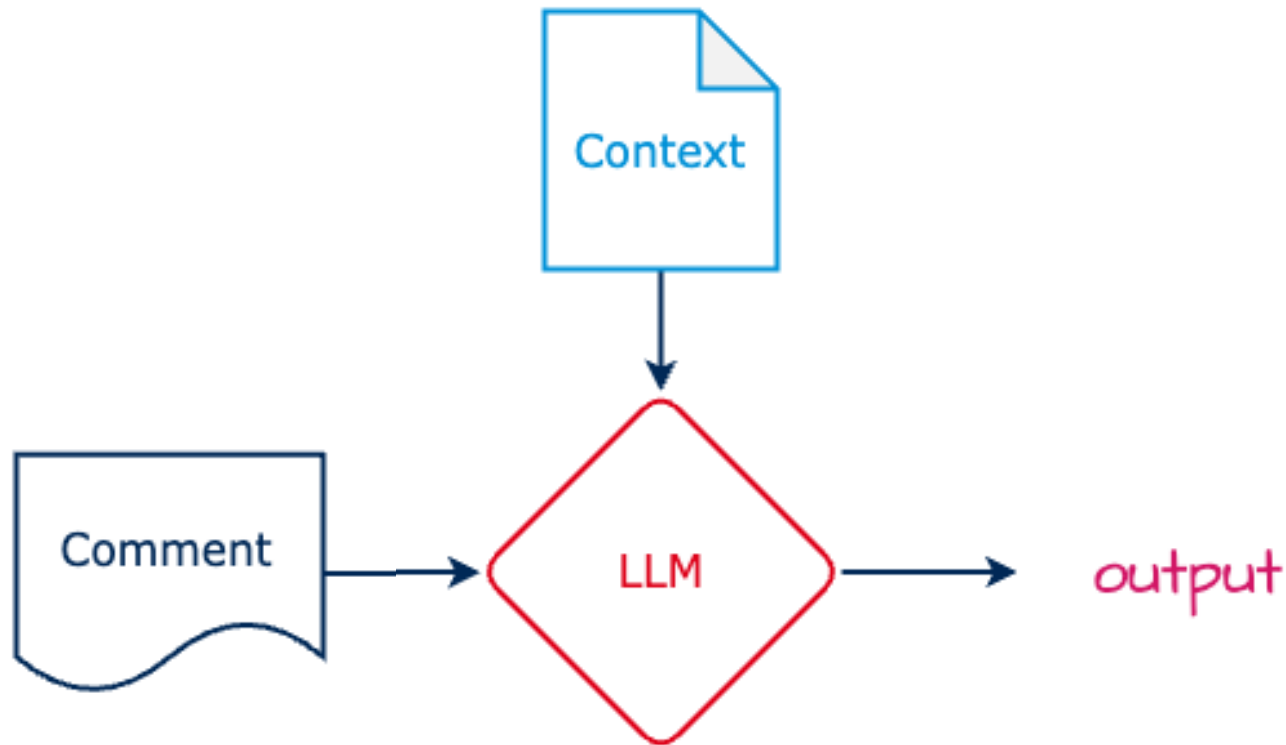


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Models - Comments Relevance Classifier



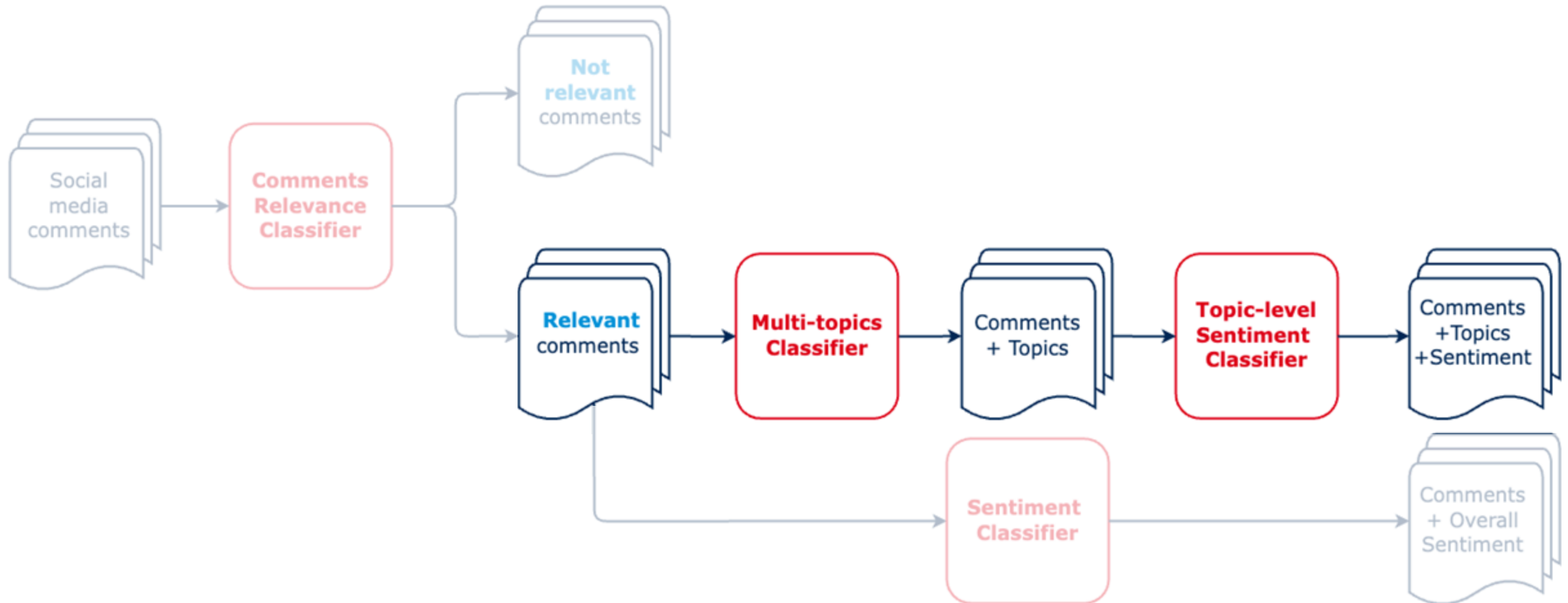
- **Context:** Detailed description of the product to which the comment should refer and few examples
- **Output:** Relevance label



Classification Pipelines - Comments

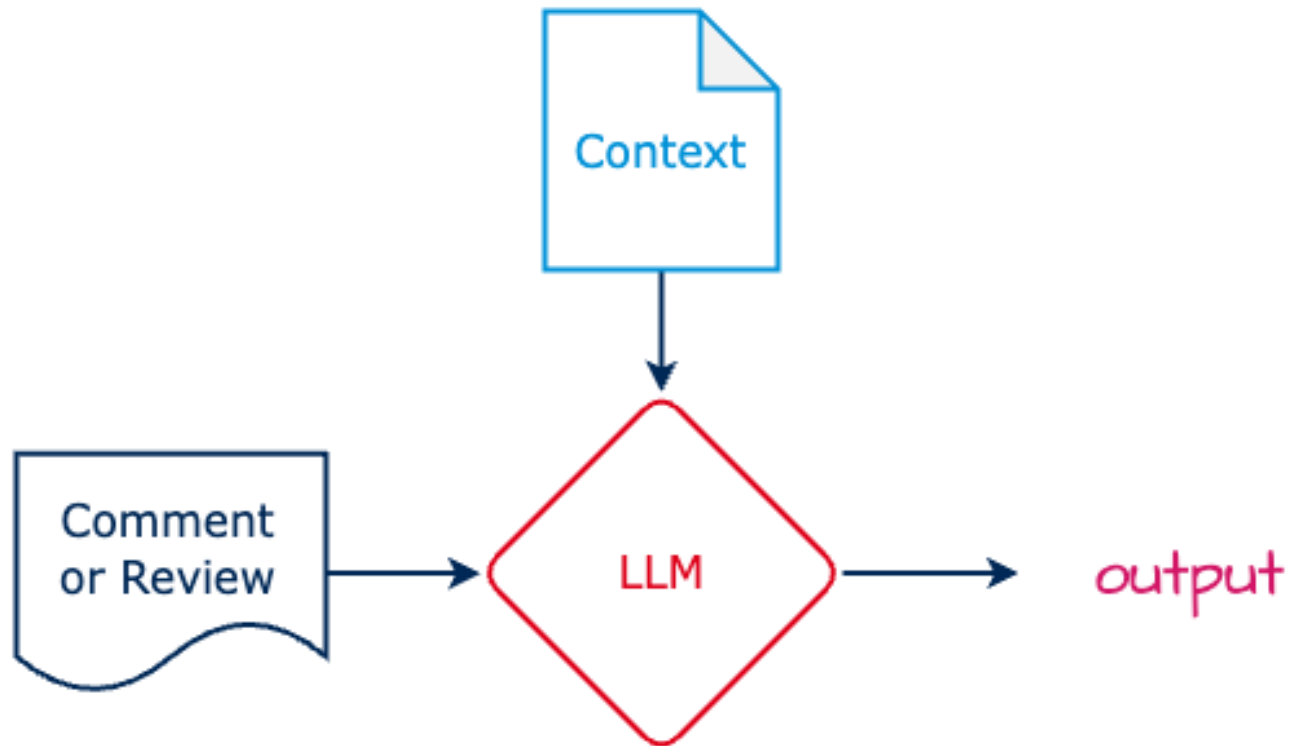


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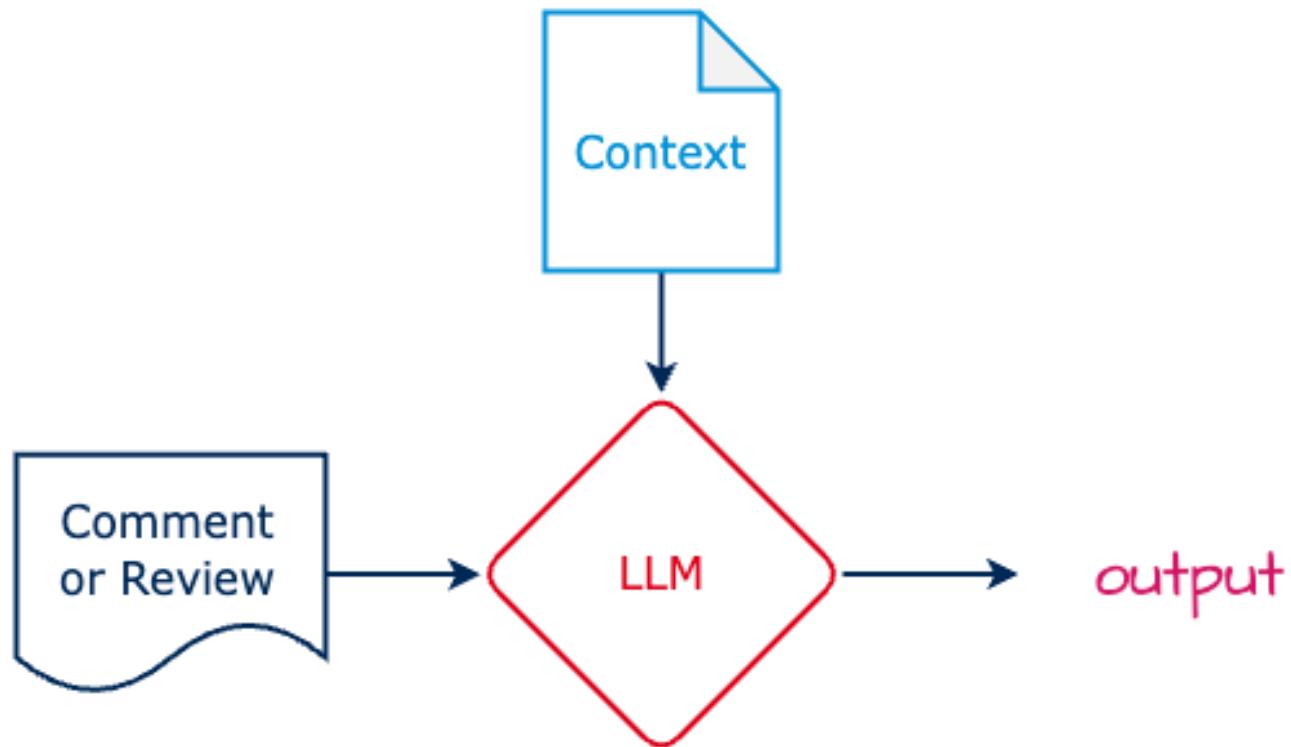
Models - Multi-topics Classifier



- **Context:** List of all the topics (product aspects) and few examples
- **Output:** List of topics related to the input comment



Models - Topic-level Sentiment Classifier



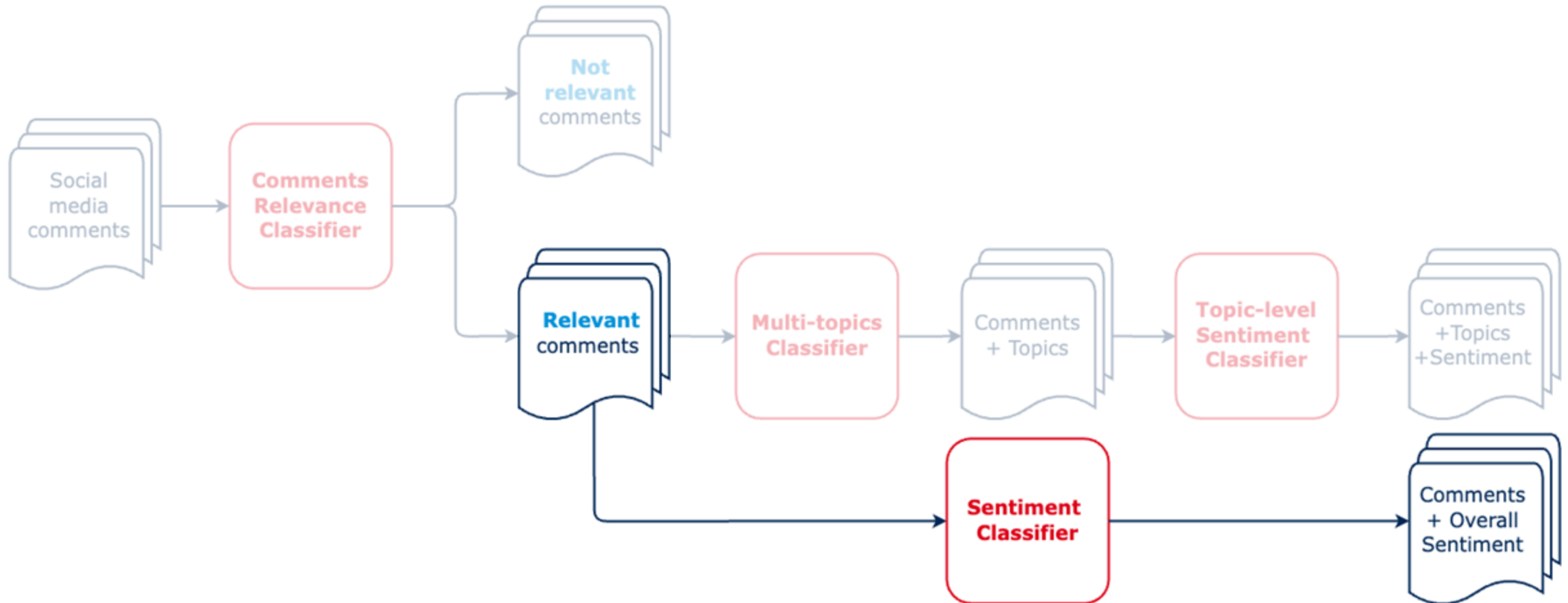
- **Context:** List of the topics related to the specific comment and few examples
- **Output:** List of topic-level sentiments



Classification Pipelines - Comments

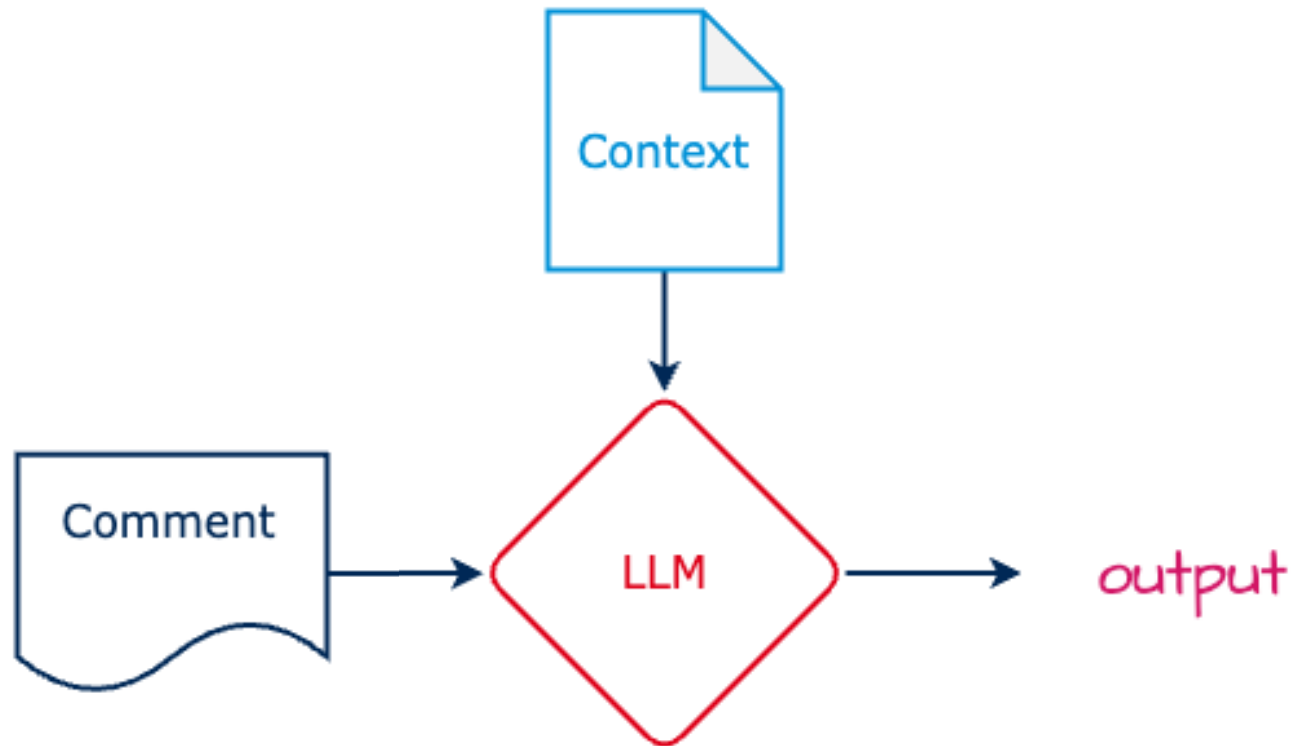


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Models - Sentiment Classifier



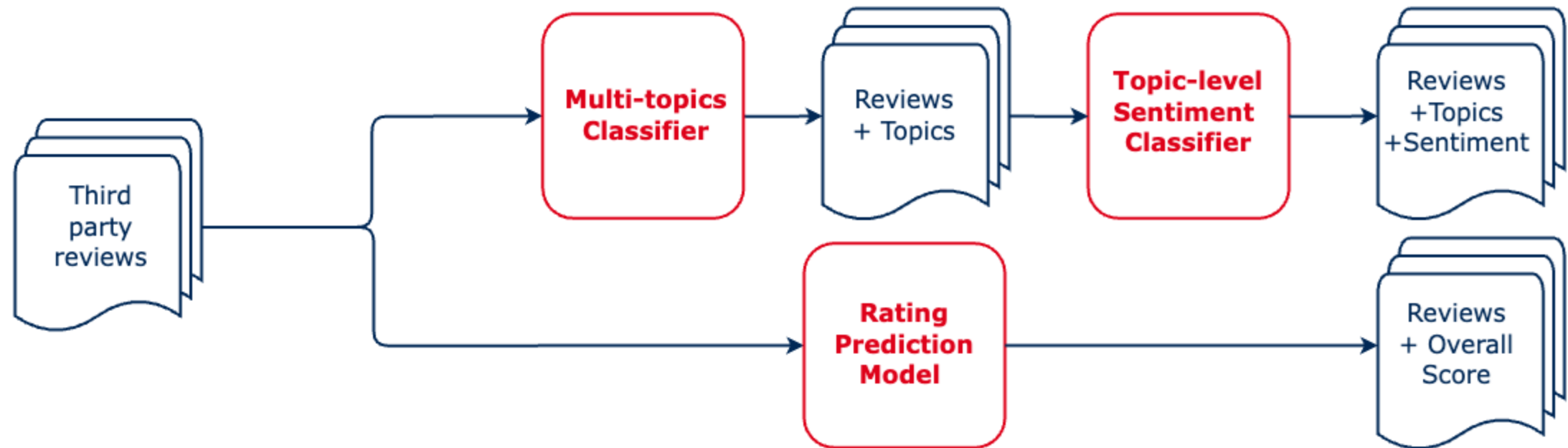
- **Context:** few positive and negative examples
- **Output:** Overall sentiment of the comment



Classification Pipelines - Reviews

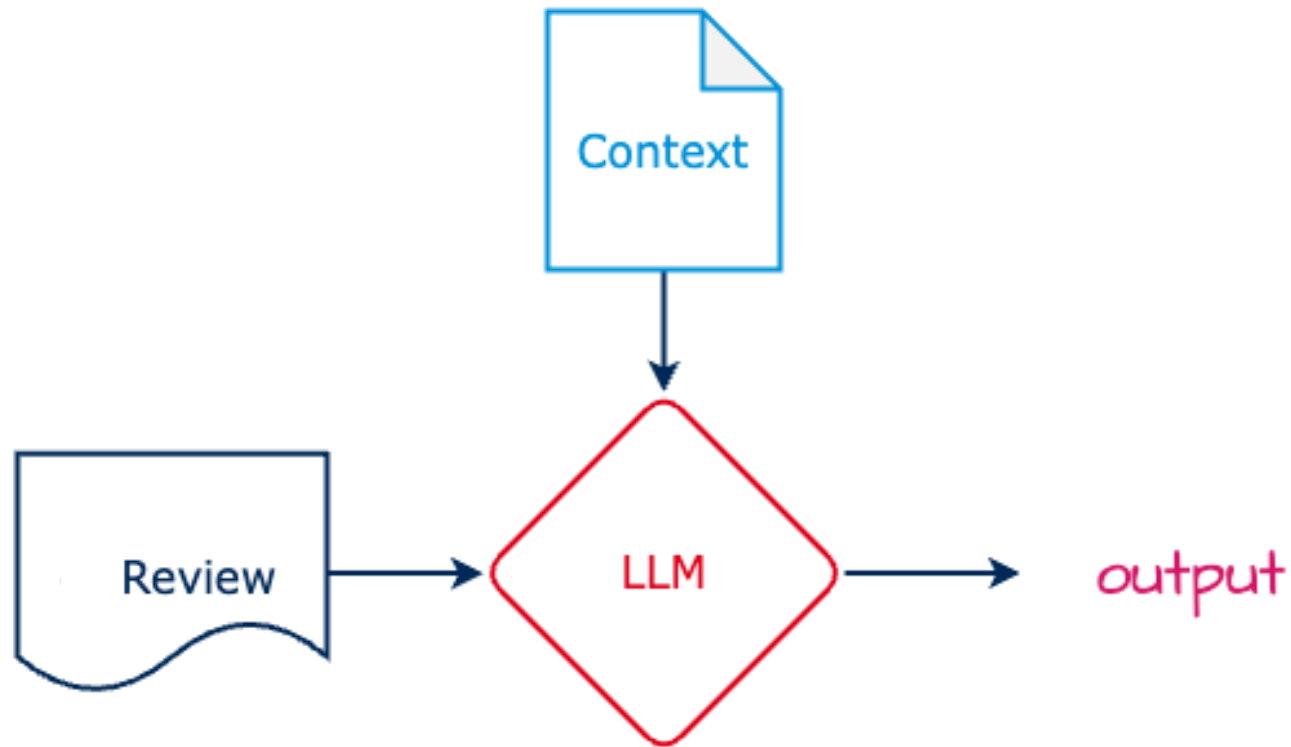


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Models - Rating Prediction Model



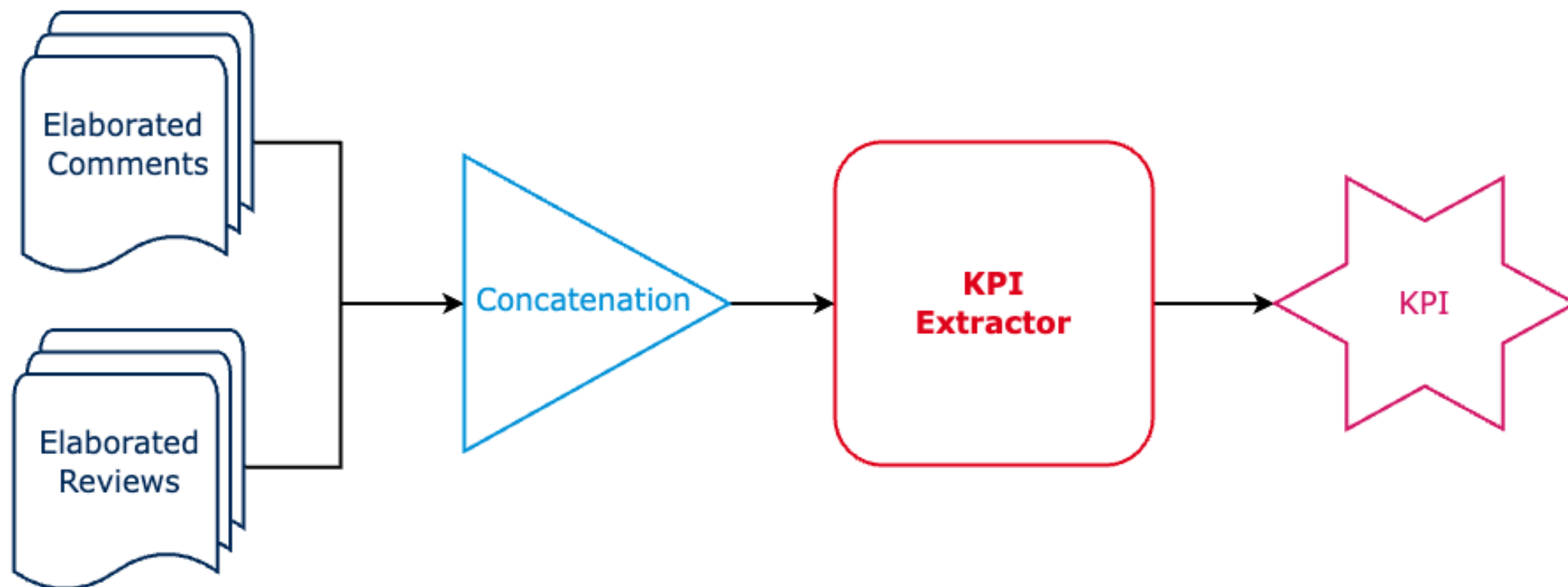
- **Context:** Brief description of the stars and examples of rated reviews
- **Output:** Star rating for each review



KPI Extraction Pipelines



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LLM



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Google DeepMind

Gemma2: large language model from Google, different versions: 2B, 9B and 27B



Llama3: large language model from Meta, 8B, 70B and 405B



Evaluation strategy



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- **Quantitative:**

Performance of **classification models** and **topic modeling tasks** via leveraging synthetic data and our data

- **Qualitative:**

Alignment with marketing objectives via meetings with stakeholders

The background is a dark blue gradient with diagonal white and light blue lines. On the left, a woman with curly hair is drinking from a white cup and holding a smartphone. On the right, a man is smiling. At the top right, there is a cup of coffee surrounded by coffee beans. At the bottom left, a pair of hands holds red coffee cherries.

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Thank you

Alessio Gioè - Catalano Vincenzo - Tommaso Mazzarini