

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**.



Experiments - Data



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**Data
Sources:**



Wonderflow



Digiming



YouTube



Instagram



**Generative
Models**

Datasets:

Reviews

Comments

**Synthetic
Comments**



Experiments - Datasets



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Reviews:

- Records: **2930**
- Reviews **labelled** for **Sentiment Classification**: **96,5%** of the reviews have at least one label between positive, negative and neutral topics.
- Reviews **labelled** for **Star Rating**: **100%**
- **Tiny Eco** Reviews: **79**

Comments:

- Records: **573**
- **Labelled** Comments: **0%**
- **Tiny Eco** Reviews: **76**

Synthetic Comments:

- Records: **236**
- **Labelled** Comments: **100%**



Research questions



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

In particular:

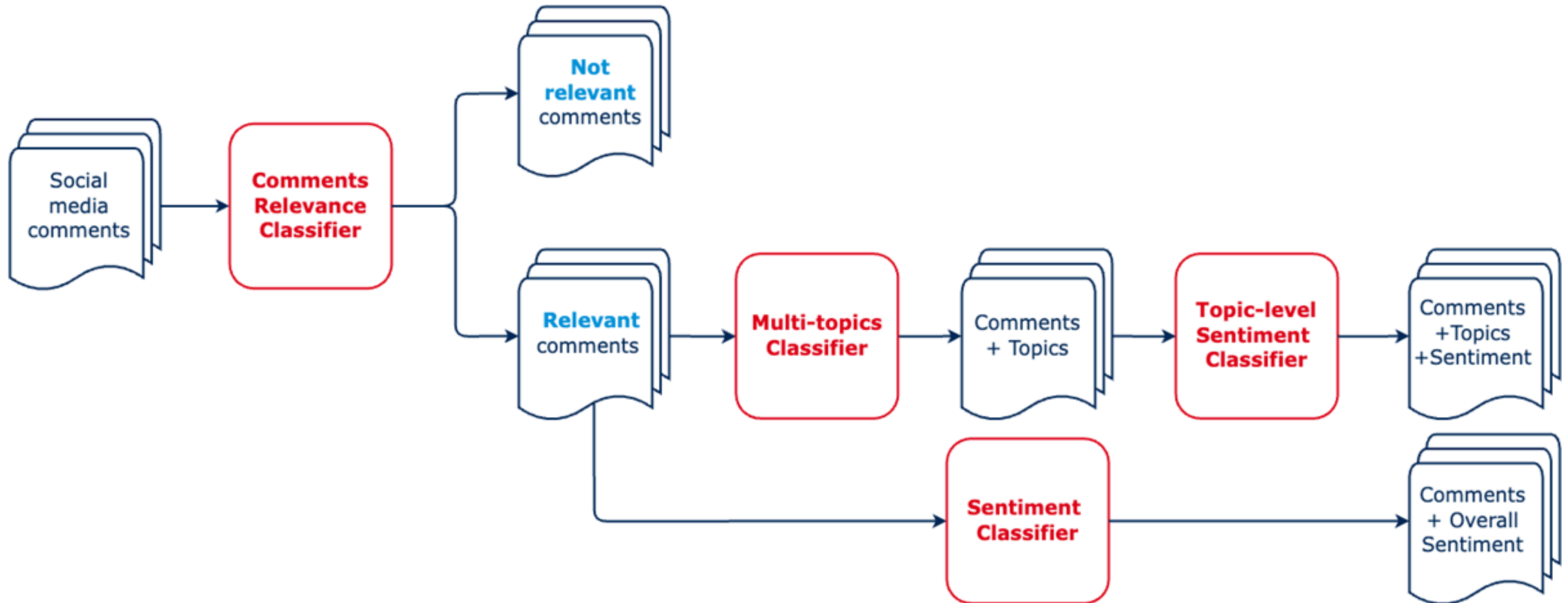
1. How effectively can **LLMs** identify **product-relevant comments**?
2. To what extent **LLMs** are able to **extract product aspects** from reviews and comments and **assign sentiments** to them?
3. How successfully are **LLMs** able to **assign a sentiment** to comments and **rating stars** to reviews?



Classification Pipelines - Comments

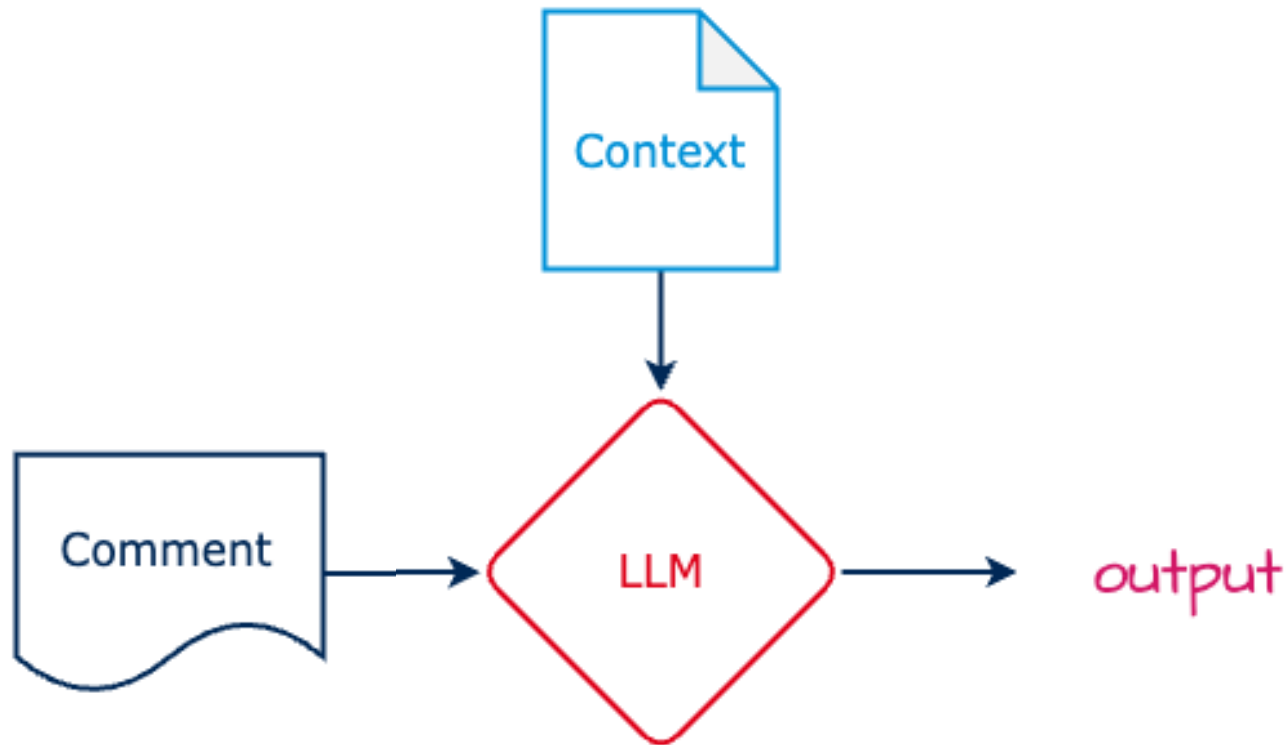


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Models - Comments Relevance Classifier



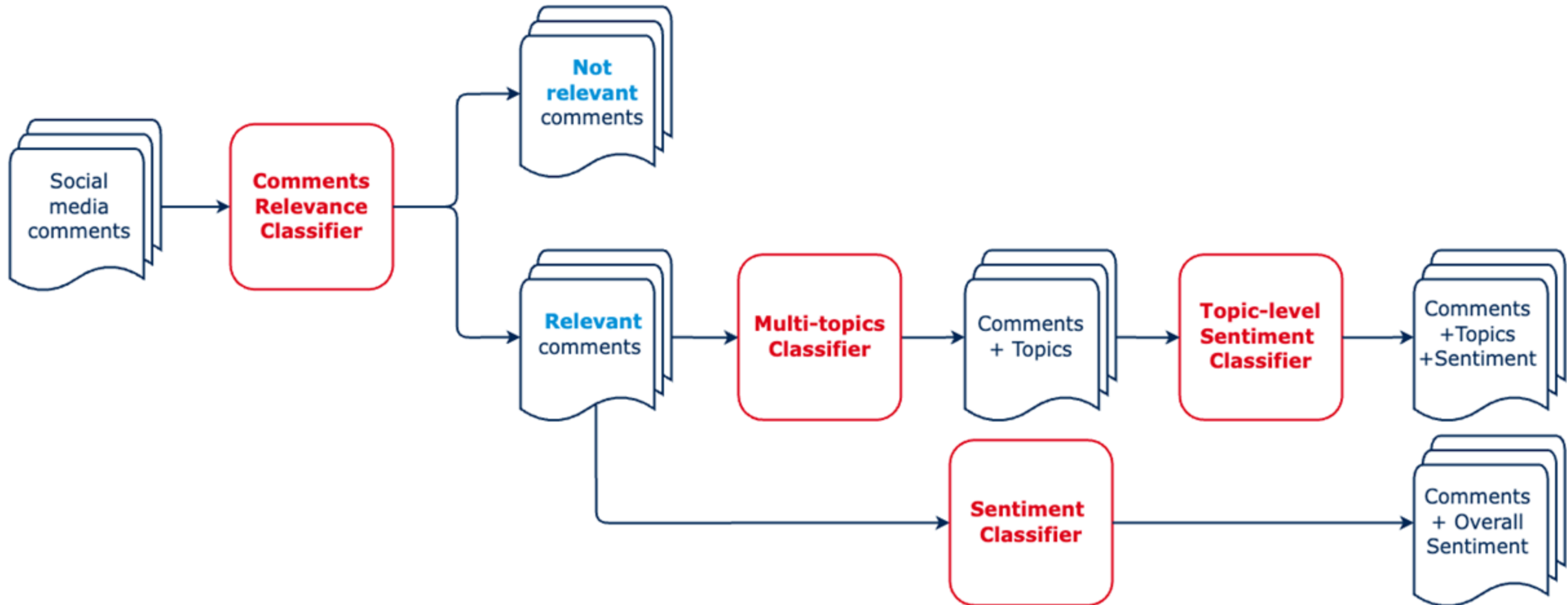
- **Context:** Detailed description of the product to which the comment should refer and few examples
- **Output:** Relevance label



Classification Pipelines - Comments

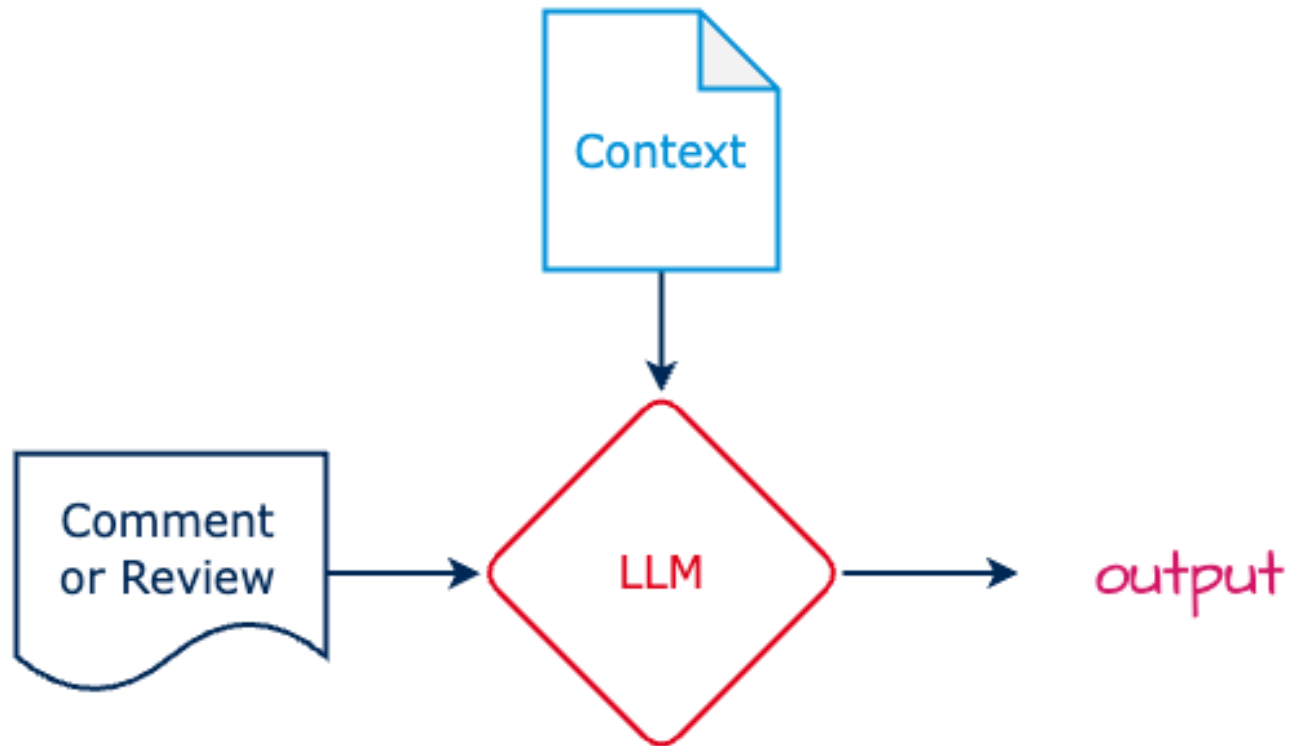


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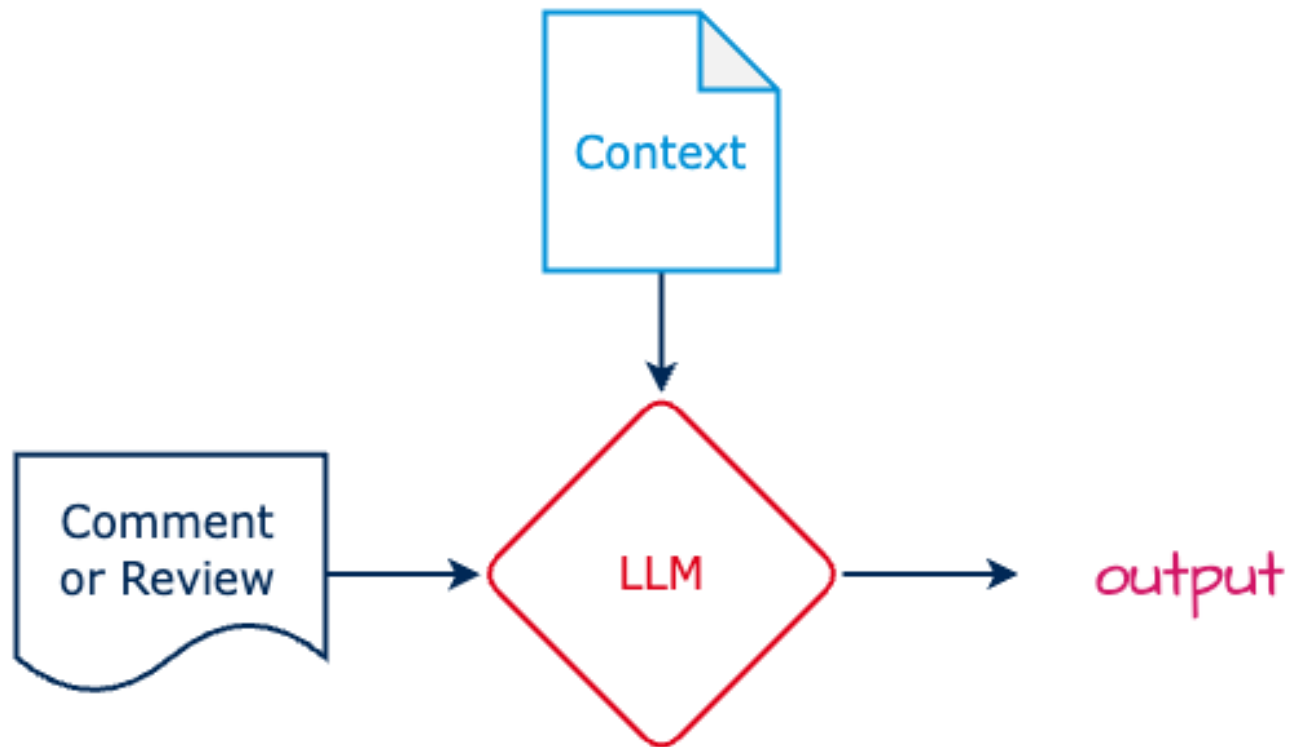
Models - Multi-topics Classifier



- **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



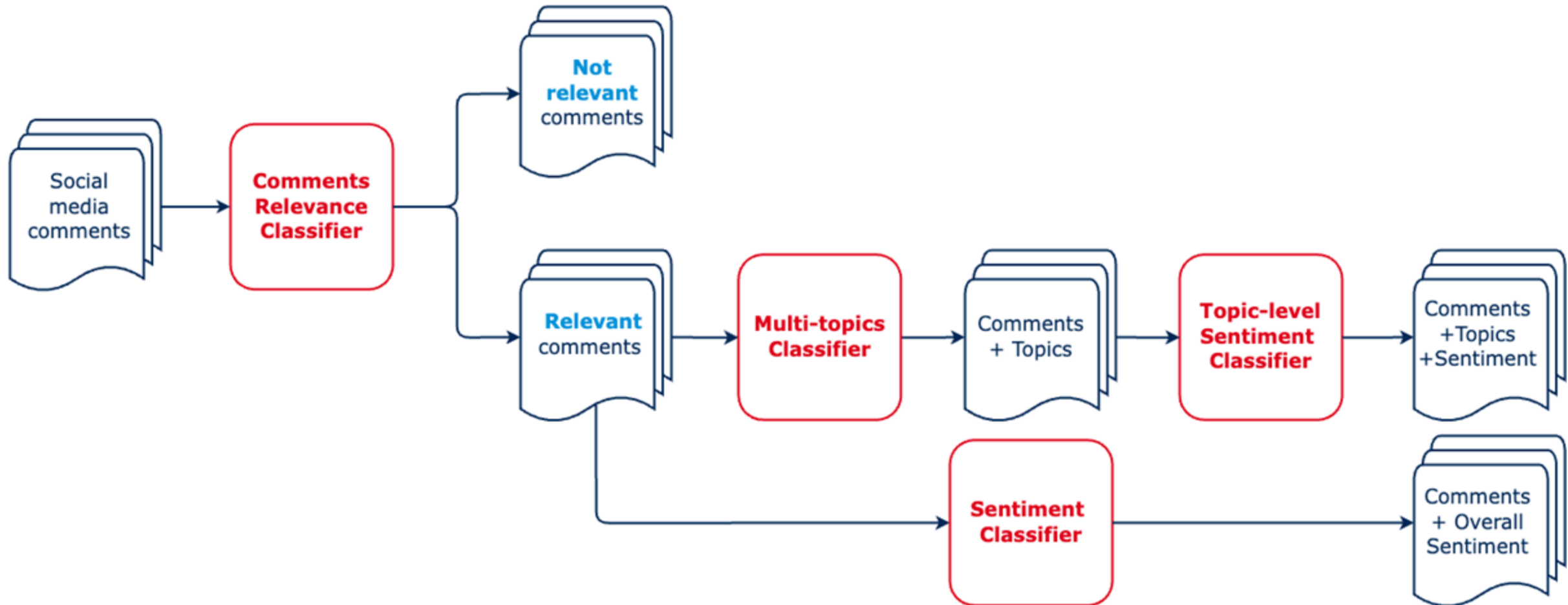
- **Context:** List of the topics related to the specific comment and few examples
- **Output:** List of topic-level sentiments



Classification Pipelines - Comments

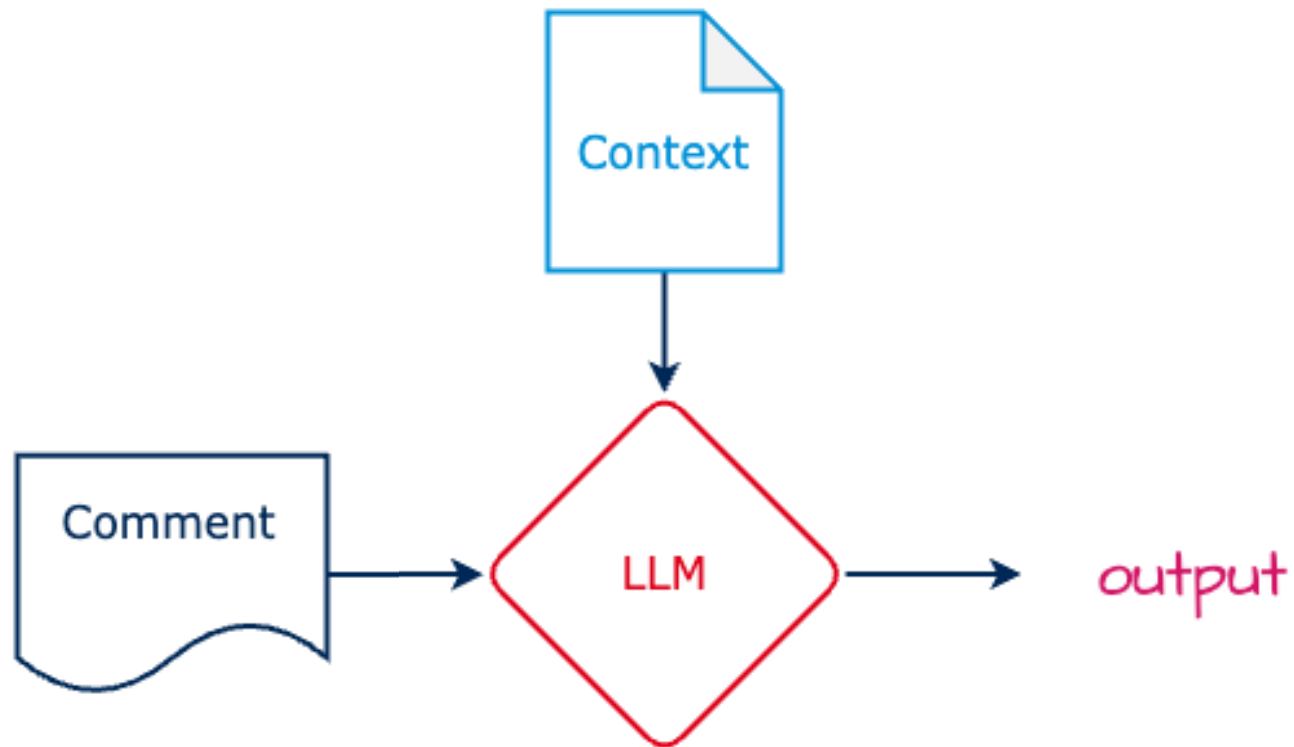


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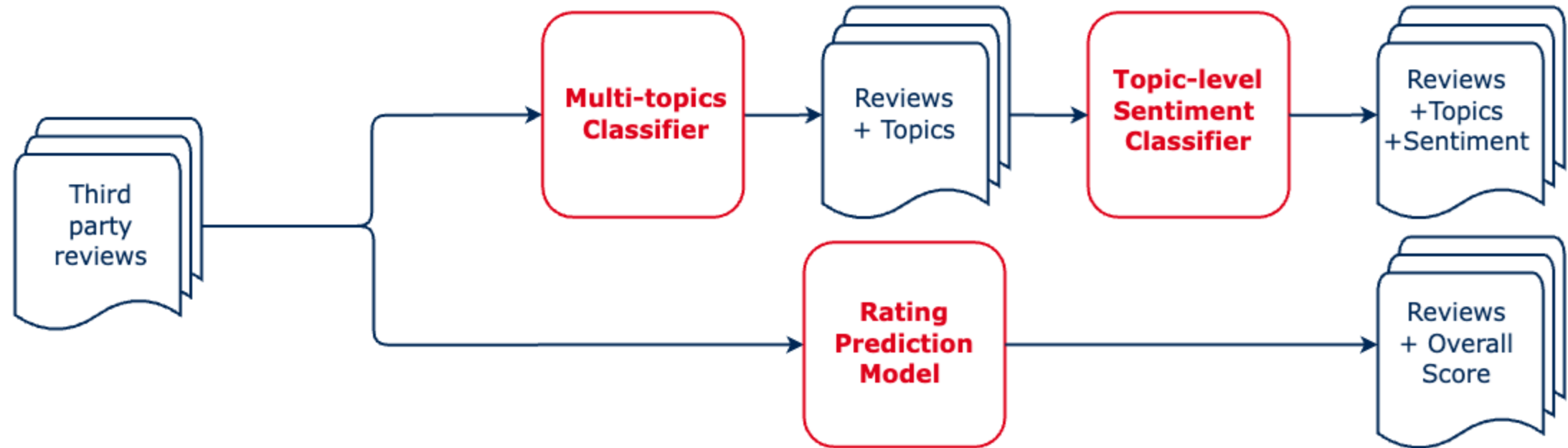
Models - Sentiment Classifier



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

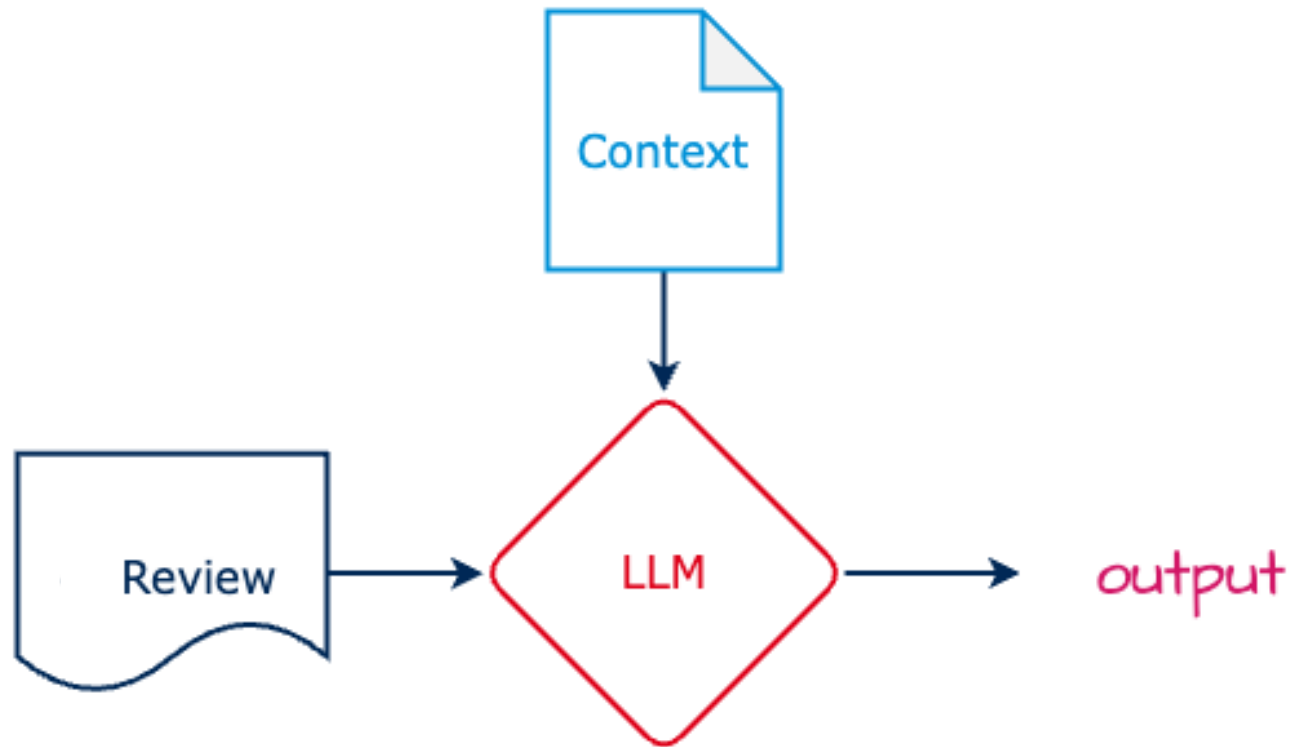


Classification Pipelines - Reviews





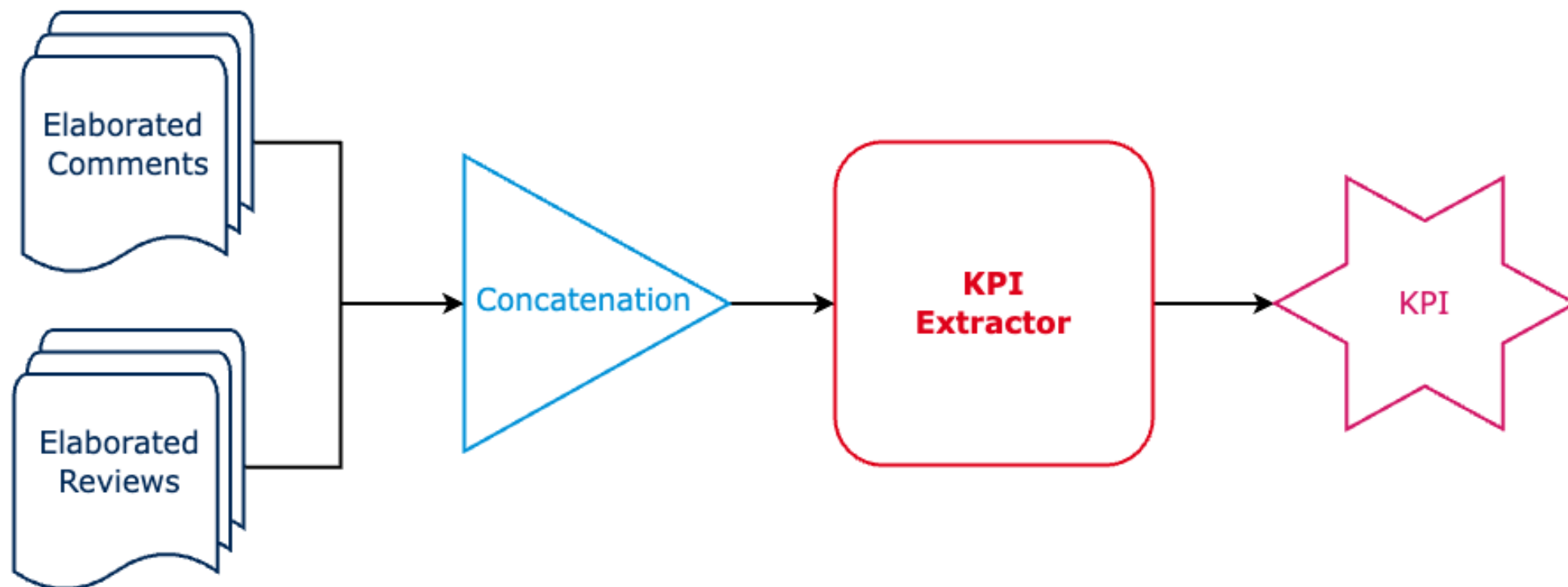
Models - Rating Prediction Model



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



KPI Extraction Pipelines





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 of the slide is a dark blue gradient with several diagonal, semi-transparent panels. These panels contain images: a woman with curly hair drinking from a white cup and holding a smartphone; a close-up of a white cup filled with coffee surrounded by coffee beans; and a smiling man in a grey t-shirt. The text is centered on the dark blue background.

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Thank you

Alessio Gioè - Catalano Vincenzo - Tommaso Mazzarini