

# **StudyMate: Your AI Research Assistant**

Team “The Promptonauts”

# Tools & Technologies

## Exploring Tool

Reads PDFs

## Summarization Tool

Extracts key points



## Translation Tool

Translates content to target language

## Extended Answering

Answers follow-up questions, search of similar papers in Google Scholar

# Problem

**Students often struggle with understanding complex academic texts, especially in foreign languages.**

## Complexity

Academic papers are long and hard to digest

## Time

Manual research and summarizing takes too much time

## Languages

Many are in English, which is not every student's native language

# How It Works INSIDE

● Step 1 – calling model...

Model response:

```
id='8763074d44c84c33916c8301d3da31eb' object='chat.completion' model='mistral-large-latest' usage=UsageInfo(prompt_tokens=772, completion_tokens=10)
```

function\_name: translate\_text

function\_params: {'text': 'Artificial Intelligence is transforming education.', 'language': 'German'}

Tool Call: translate\_text({'text': 'Artificial Intelligence is transforming education.', 'language': 'German'})

Function result:

Künstliche Intelligenz verändert die Bildung.

● Step 2 – calling model...

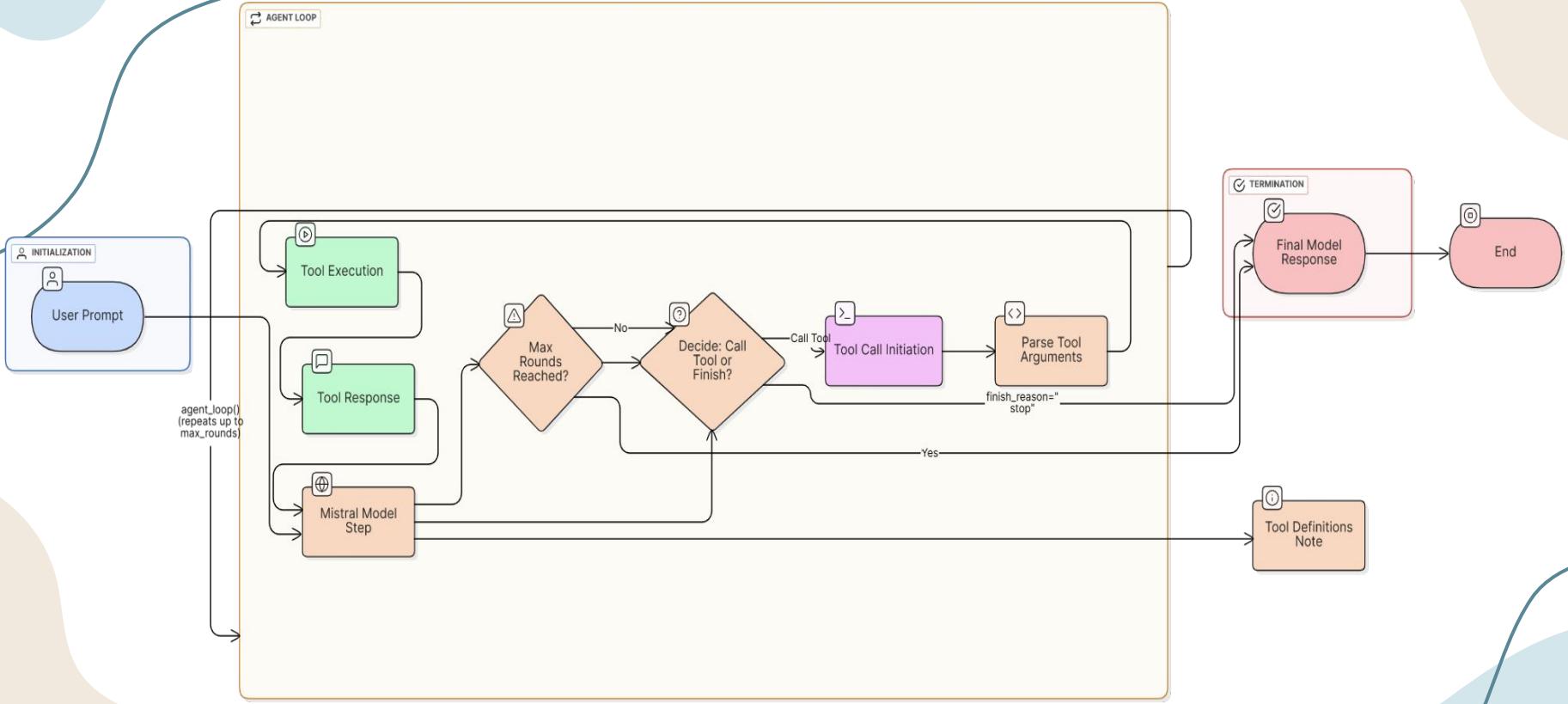
Model response:

```
id='0e4eb0626a184a45ba32f27f2e93b0c1' object='chat.completion' model='mistral-large-latest' usage=UsageInfo(prompt_tokens=96, completion_tokens=10)
```

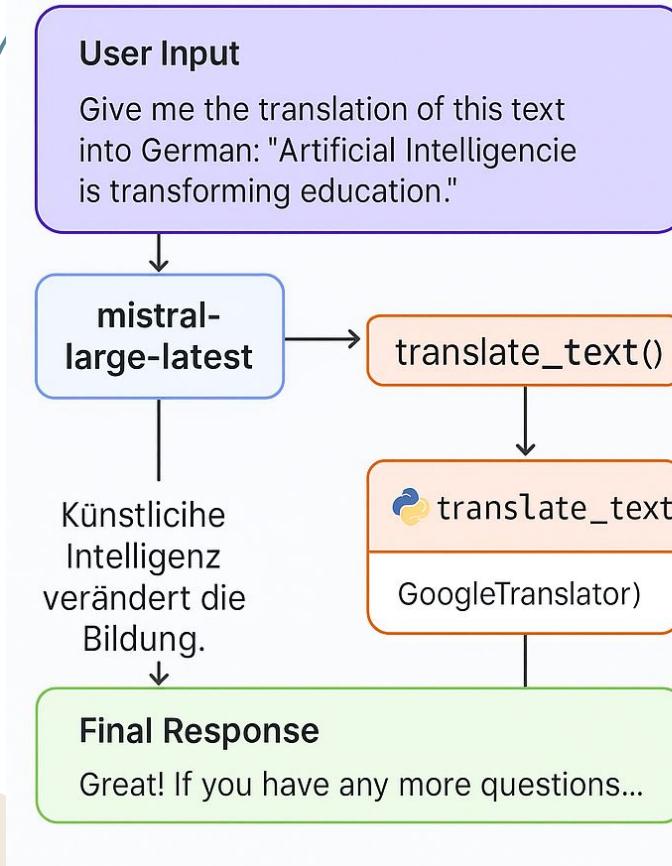
✓ Model signaled stop – final assistant reply.

■ Final conversation:

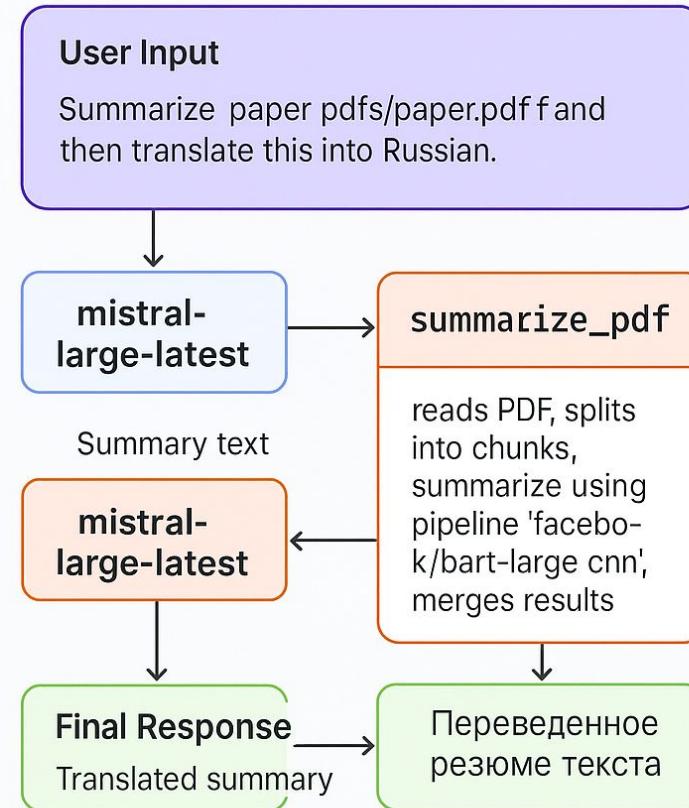
```
[{"role": "user", "content": "Give me the translation of this text into German: \"Artificial Intelligence is transforming education.\""},
```

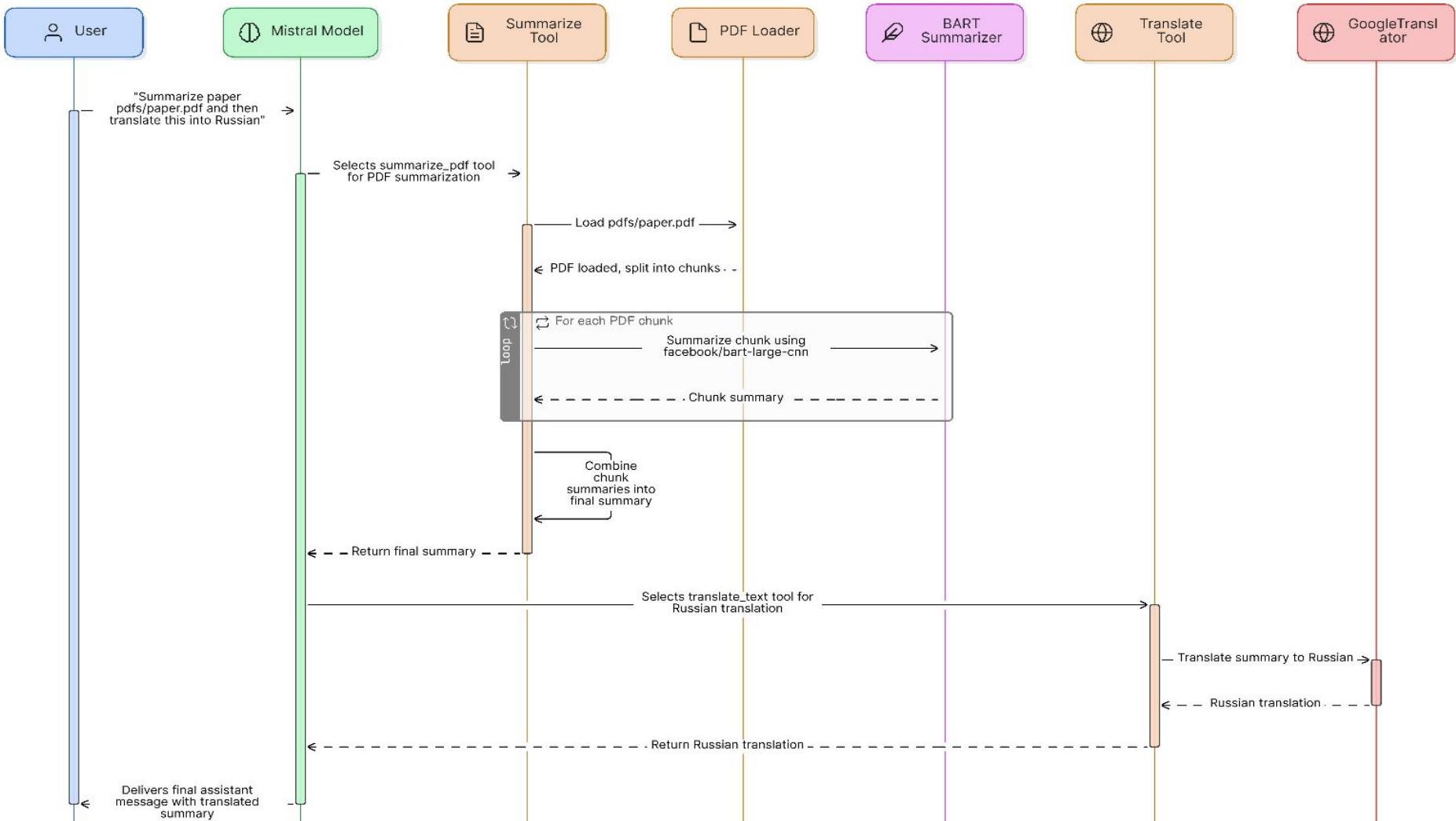


## Single Tool Call



## Chained Tool Calls





# How It Works

## StudyMate – Chat with Academic PDFs

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Ask your question (e.g., summarize, translate, similar papers):

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# How It Works

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 paper.pdf 1.5MB 

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Ask your question (e.g., summarize, translate, similar papers):



# How It Works

Ask your question

Give me the summarization of the PDF

Send

You: Give me the summarization of the PDF

**StudyMate:** Temporal Action Localization (TAL) has experienced remarkable success under the supervised learning paradigm. However, existing TAL methods are rooted in the closed set assumption, which cannot handle the inevitable unknown actions in open-world scenarios. In this paper, we, for the first time, step toward the Open Set TAL (OSTAL) problem and propose a general framework OpenTAL based on Evidential Deep Learning (EDL). Specifically, the OpenTAL consists of uncertainty-aware action classification, actionness prediction, and temporal location regression. With the proposed importance-balanced EDL method, classification uncertainty is learned by collecting categorical evidence majorly from important samples. To distinguish the unknown actions from background video frames, the actionness is learned by the positive-unlabeled learning. The classification uncertainty is further calibrated by leveraging the guidance from the temporal localization quality. The OpenTAL is general to enable existing TAL models for open set scenarios, and experimental results on THUMOS14 and ActivityNet1.3 benchmarks show the effectiveness of our method.

# How It Works

You: Give me the translation of this summary into German

**StudyMate:** Die zeitliche Aktionslokalisierung (TAL) hat im Rahmen des überwachten Lernens bemerkenswerte Erfolge erzielt. Bestehende TAL-Methoden basieren jedoch auf der Annahme eines geschlossenen Sets, das die unvermeidlichen unbekannten Aktionen in Open-World-Szenarien nicht bewältigen kann. In dieser Arbeit nähern wir uns erstmals dem Problem der Open-Set-TAL (OSTAL) und schlagen ein allgemeines OpenTAL-Framework basierend auf Evidential Deep Learning (EDL) vor. OpenTAL besteht aus einer unsicherheitsbewussten Aktionsklassifizierung, einer Aktionsvorhersage und einer Regression der zeitlichen Lokalisierung. Mit der vorgeschlagenen, wichtigkeitsbalancierten EDL-Methode wird die Klassifizierungsunsicherheit durch das Sammeln kategorischer Evidenz, hauptsächlich aus wichtigen Stichproben, erlernt. Um die unbekannten Aktionen von Hintergrundvideobildern zu unterscheiden, wird die Aktionsintensität durch positives, unmarkiertes Lernen erlernt. Die Klassifizierungsunsicherheit wird zusätzlich durch die Nutzung der zeitlichen Lokalisierungsqualität kalibriert. OpenTAL ist allgemein dafür gedacht, bestehende TAL-Modelle für offene Szenarien zu aktivieren. Experimentelle Ergebnisse der THUMOS14- und ActivityNet1.3-Benchmarks zeigen die Effektivität unserer Methode. Der Code und die vortrainierten Modelle sind verfügbar unter

# How It Works

**You:** Search similar papers using this summary

**StudyMate:** 1. Fabian Caba Heilbron, Victor Escorcia, Bernard Ghanem, and Juan Carlos Niebles.

Activitynet: A large-scale video benchmark for human activity understanding.

2. Guangyao Chen, Peixi Peng, Xiangqian Wang, and Yonghong Tian. Adversarial reciprocal points learning for open set recognition

# Evaluation

	<b>Summary   CNN_DailyMail</b>	<b>Translate   WMT15</b>
<b>ROUGE-L</b>	0.3541	0.5111
<b>BERTScore</b>	0.8775	0.8451
<b>BLEU</b>	-	0.1896

# Our Team



**Vadim Chaikin**

- Sets up Hugging Face Agent and tools
- Designs user interface and handles input/output formatting
- Tests tool responses and user interactions



**Aleksandr Pavlenko**

- Handles document parsing and tool logic
- Connects agent tools to the interface
- Ensures smooth system flow and performance

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