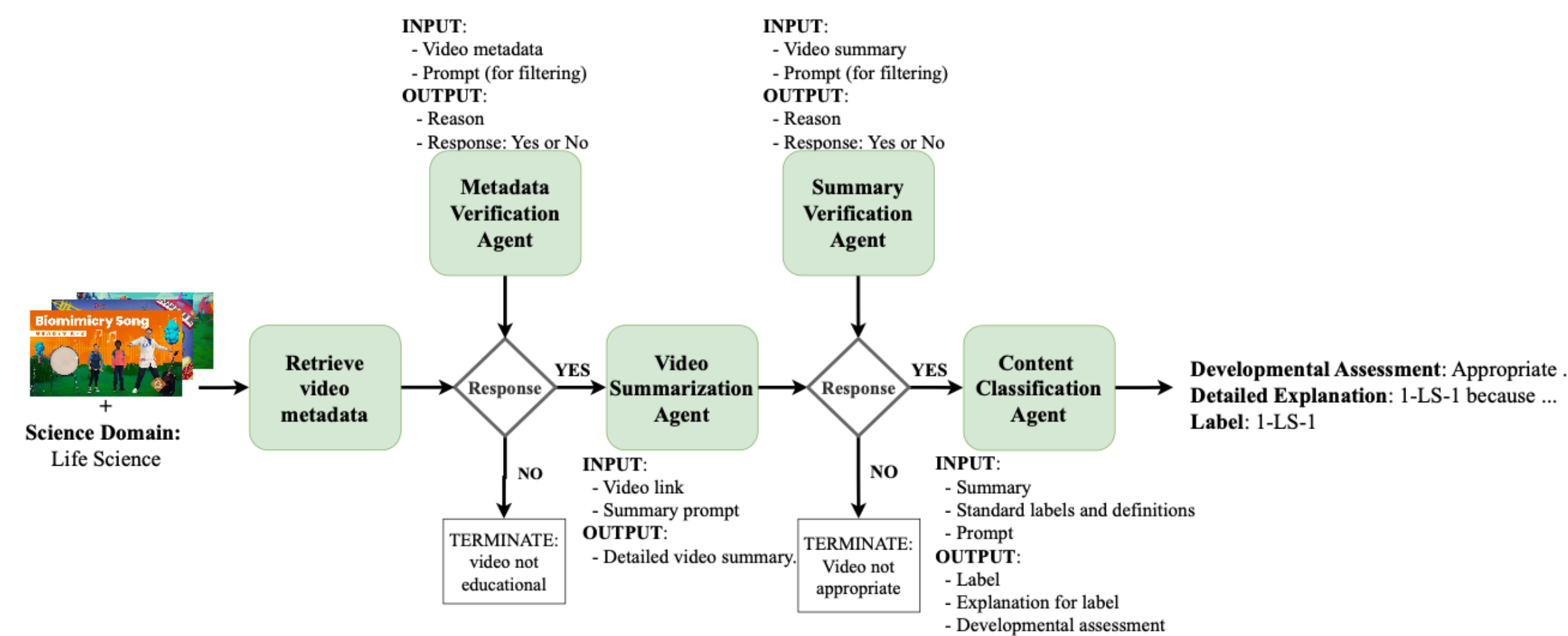


## Motivation

- ❖ Elementary teachers lack efficient ways to find age-appropriate, NGSS-aligned science videos.
- ❖ YouTube contains abundant content, but evaluating accuracy and standards alignment is time-consuming.
- ❖ Existing AI tools focus on students and do not provide standards-based video evaluation for teachers.
- ❖ STARVIS fills this gap with a multi-agent system that assesses vocabulary level, topic relevance, ad presence, and NGSS alignment.

## Framework



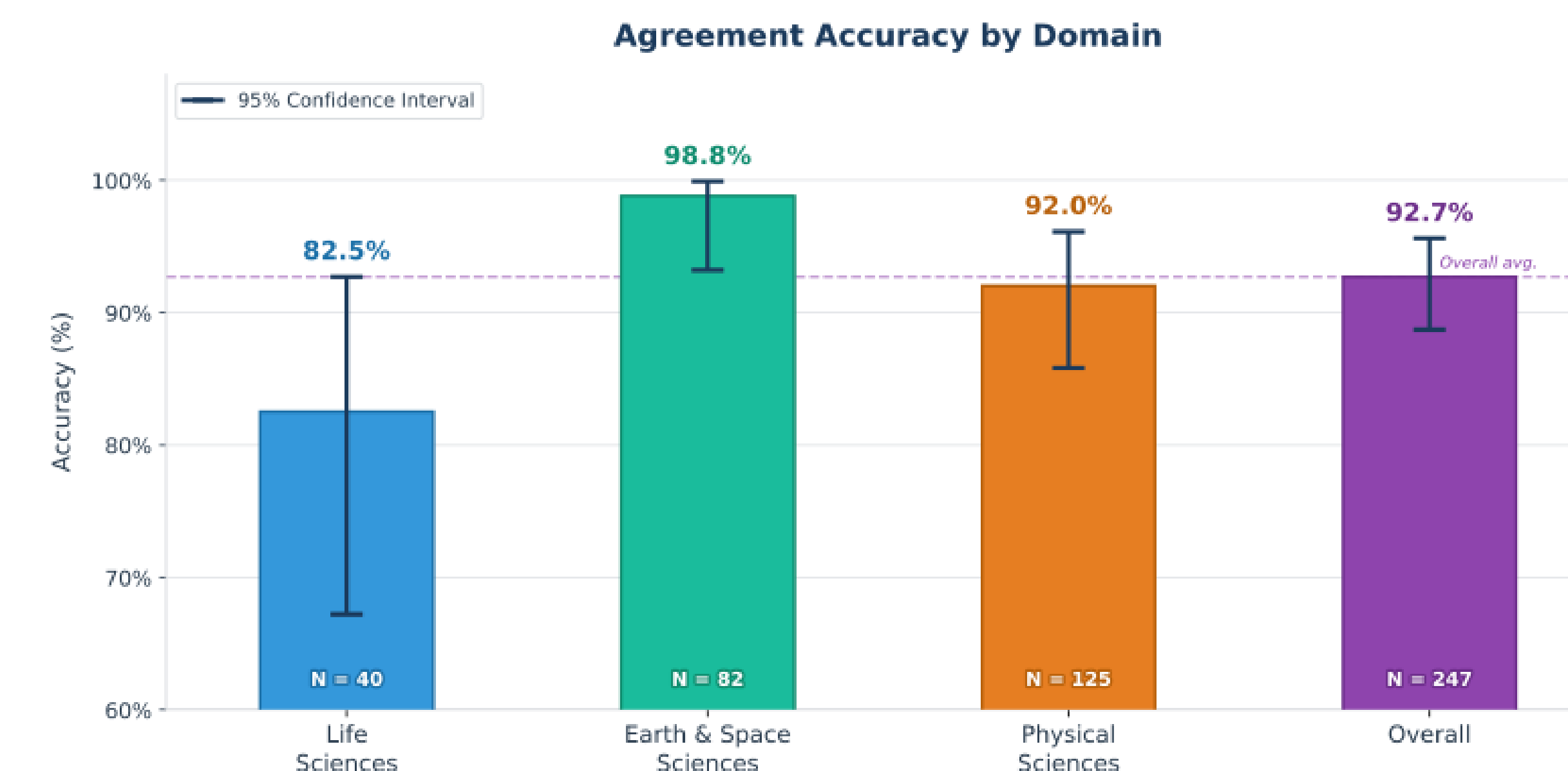
STARVIS: Multimodal Framework for Science Video Classification Pipeline

### LOVE Science Teacher Tools

Web Interface for STARVIS

## Results

- ❖ **Benchmark:** 247 science videos from YouTube
- ❖ **Metric:** Agreement Accuracy with Expert



## Approach

- ❖ Retrieve the YouTube videos.
- ❖ Analyze video metadata for appropriateness using **metadata verification agent**.
- ❖ If approved, we generate a summary focused on topic relevance, vocabulary level, and ad presence using **video summarization agent**.
- ❖ Review the summary with the **summary verification agent** to detect ads, profanity, or non-science content.
- ❖ Compare the final summary against NGSS domain labels to determine standards alignment.

## Conclusion

- ❖ STARVIS achieves 92.7% expert agreement, demonstrating that automated tools can reliably vet instructional videos against NGSS standards.
- ❖ The architecture is standards-agnostic and extensible to other subjects and grade levels.
- ❖ Future work: expand to diverse academic domains, incorporate teacher feedback, and assess real classroom impact