



AI-TA: An AI Teaching Assistant Tool

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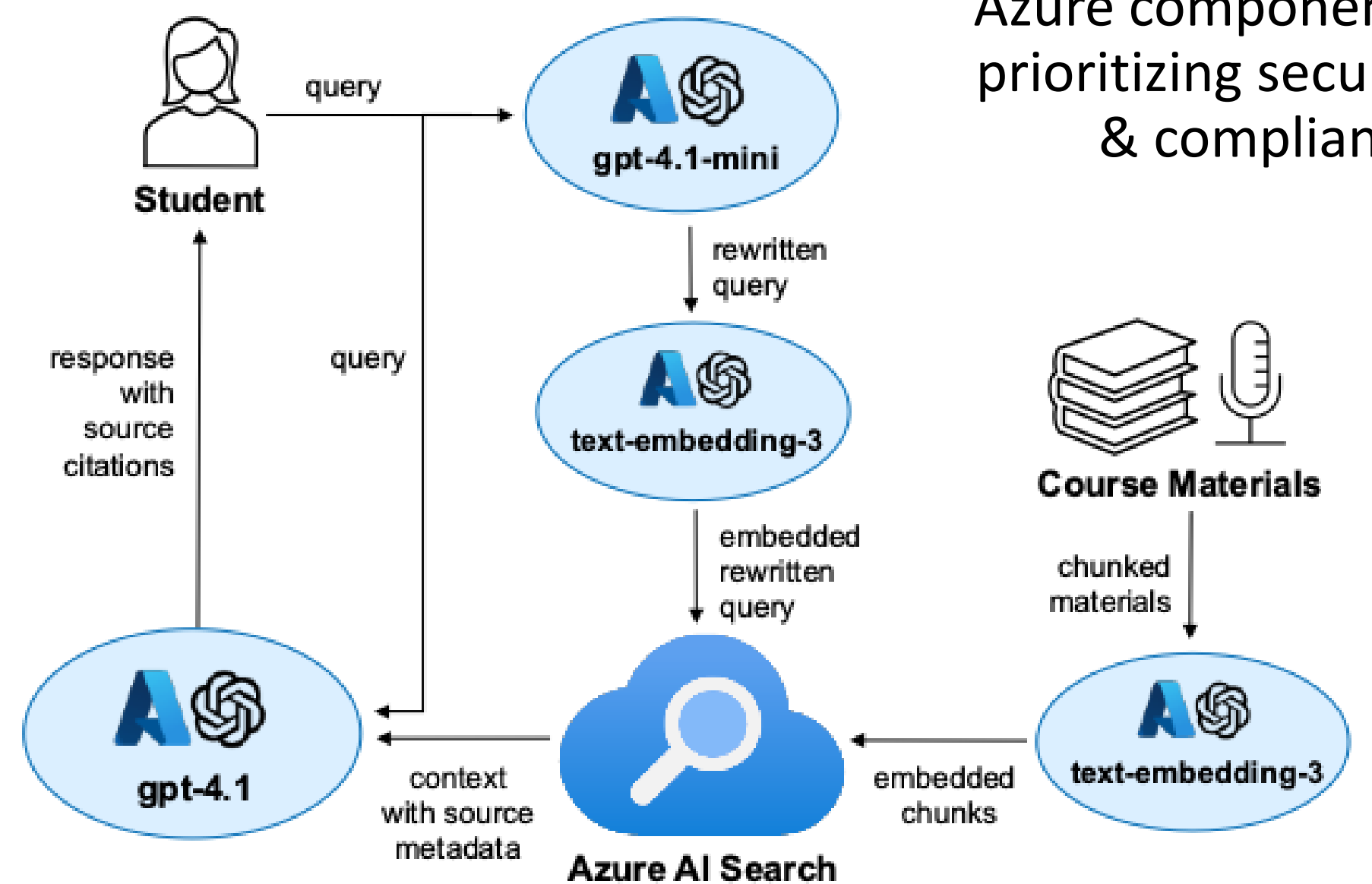
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Context & Objectives

In 2025, we piloted an LLM-driven AI Teaching Assistant (AI-TA) for students of a Master's course in the School of Engineering. In 2026, with this project, our objectives are to:

- Extend the pilot to the students of 2 Master's courses: Wave Energy (WE) taught in Civil, Structural & Environment Engineering, and Introduction to Motion Picture Engineering (MPE) taught in Electronic & Electrical Engineering.
- Compare students' engagement levels, opinions, and impact of AI-TA availability on exam performance across cohorts.
- Measure AI-TA response accuracy, informing improvement strategies.
- Prototype a lecturer's summary view of students' AI-TA queries as a potential adaptive teaching aid.
- Disseminate findings, share learnings and recommendations.

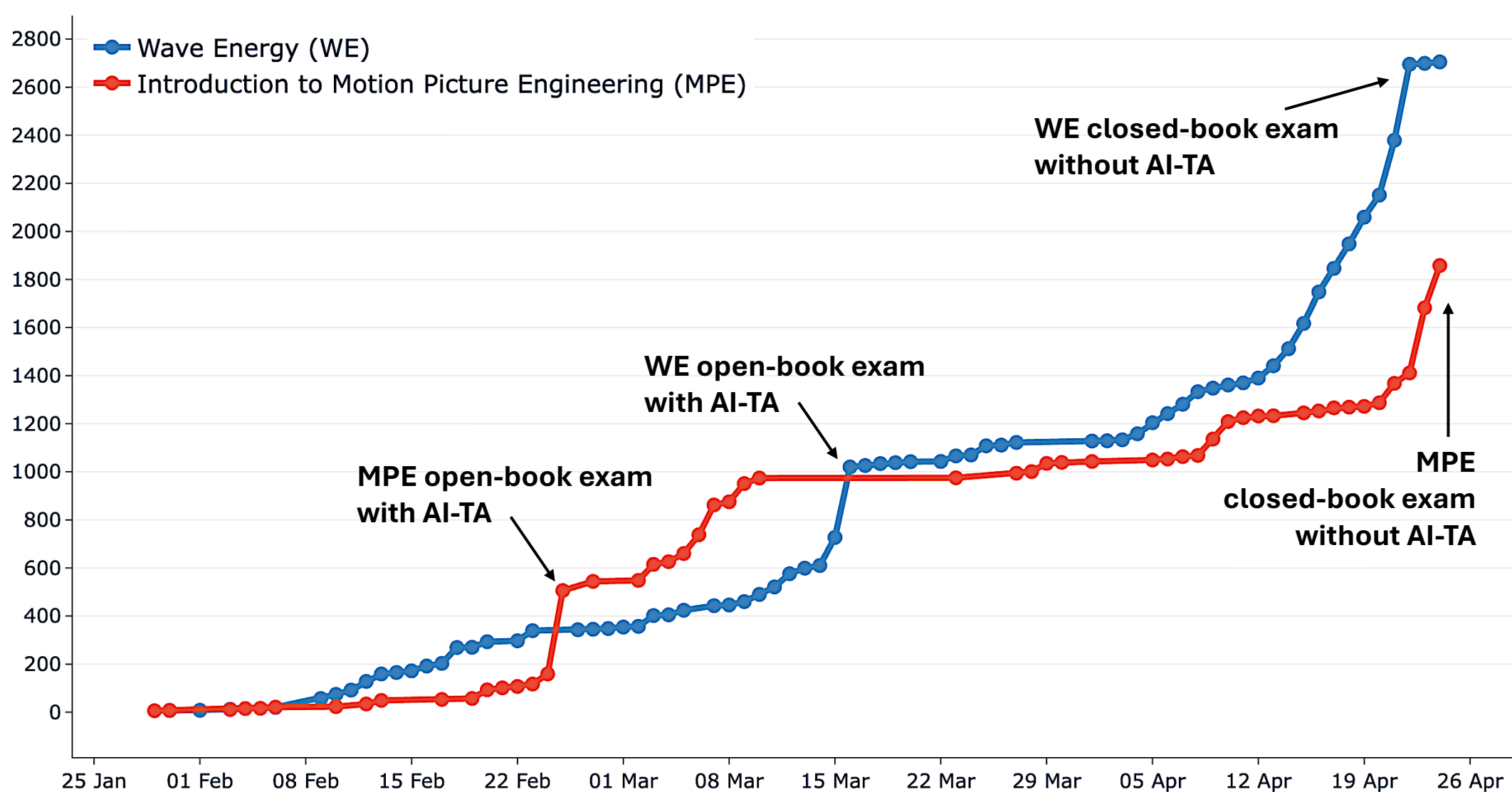
We built the AI-TA using the Retrieval-Augmented Generation (RAG) pattern with Microsoft Foundry, Azure OpenAI and other Azure components, prioritizing security & compliance.



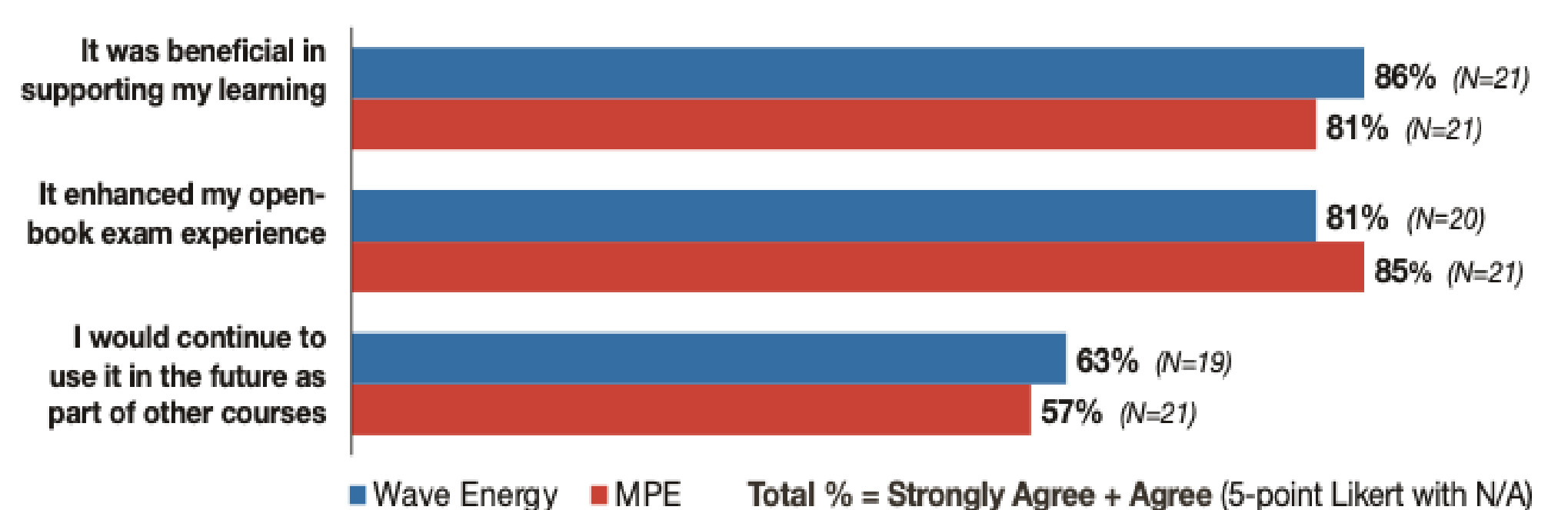
Key Outcomes & Impact

Both AI-TAs were deployed to 23 WE and 21 MPE students for approx 12 weeks. Similarly to 2025, engagement was modest at the beginning, but usage peaks eventually emerged in correlation with course assessment events, e.g., open-book exams with AI-TA access permitted, and in the lead-up to final closed-book exams.

Cumulative student queries per day 2026



Sample of 2026 course exit survey questions and responses



Students across both 2026 cohorts reported broadly positive perceptions of the AI-TA, with 81-100% agreement on its learning benefit, helpfulness, and value in open-book exams - figures consistent with the 2025 cohort.

Students across all 3 cohorts preferred the AI-TA over a real tutor only situationally. Willingness to continue using it in other courses was softer in 2026 (63% for WE, 57% for MPE) than in 2025 (81%).

We are currently working on LLM-automated topic analysis of 2026's queries, to feed into a lecturer's summary view.

Reflections

2026's extended pilot exposed many practical lessons, including:

- Engaging students proved harder than expected - many brought their own preferred AI tools to class.
- We did not meaningfully re-architect before scaling and paid for that operationally in staff hours.
- **Further rollout will require strategic university investment rather than incremental effort.**

Upcoming work will include exam performance analysis, formal evaluation of the AI-TA's accuracy and trustworthiness, and deeper interrogation of student queries to characterize the AI-TA's pedagogical value.

