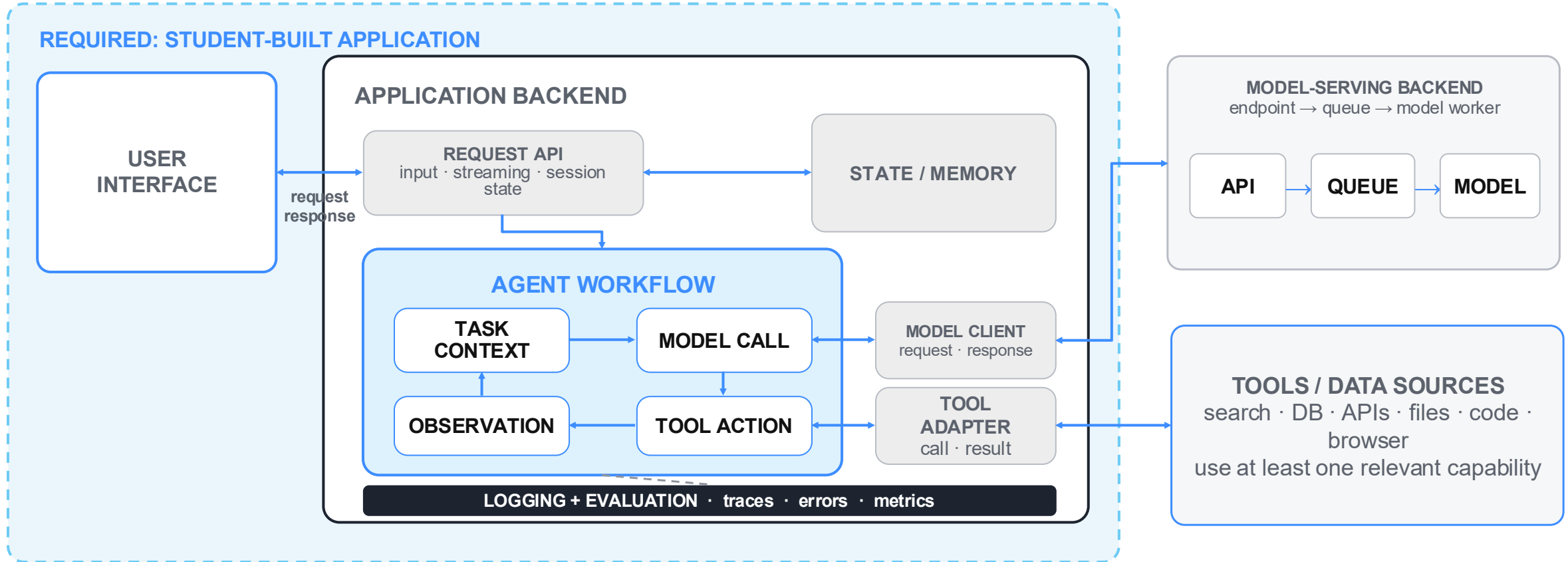


Course Project

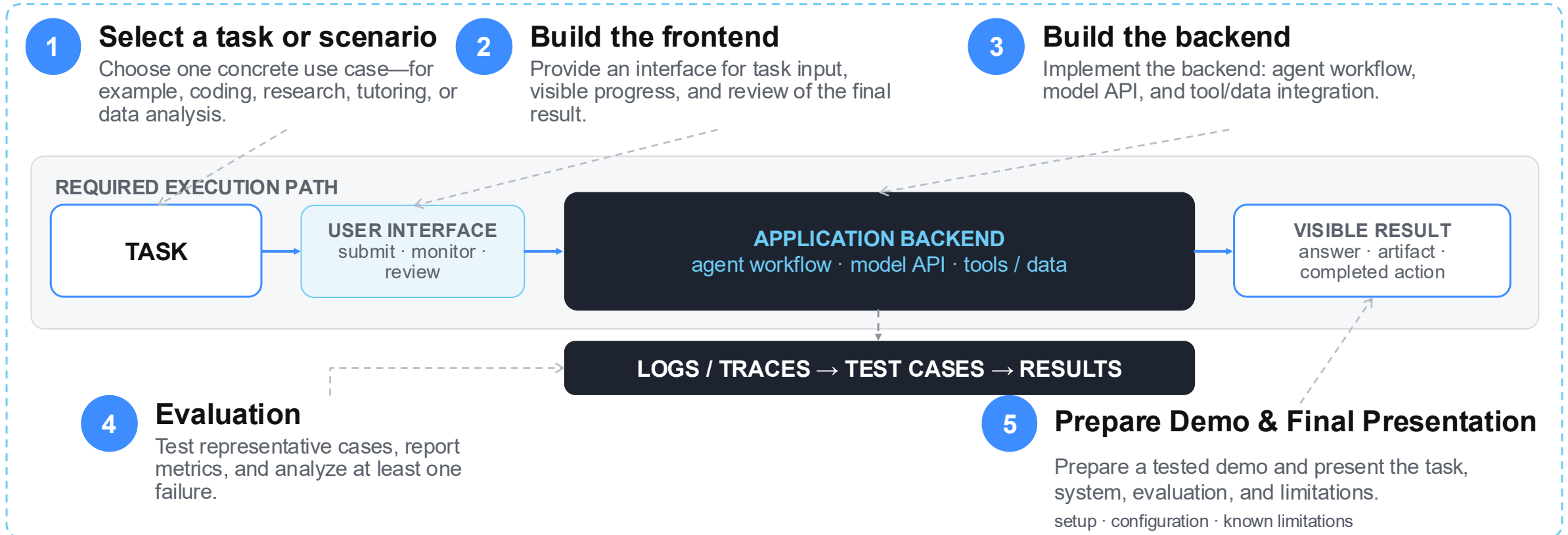
Building an End-to-End Agent System

Advanced AI Computing and Systems

Course Project: build an Agent System on TACC



Requirements and Deliverables



FINAL DELIVERABLES

Code Repository · Final Report · Demo · Final Presentation

Recommended Exploration Directions

01

TASK LEARNING & ADAPTATION

Improve performance for a specific task, domain, or user group.

Task-evaluation metric:
quantify improvement over a baseline

02

SYSTEM EFFICIENCY

Reduce latency or resource use without unacceptable task-quality loss.

System metric:
quantify gains vs. baseline without degrading task quality.

Possible Project Topics

Trip Planning Agent

A traveler needs a practical trip that fits their budget, interests, and available time.

Compare transport, stays, and activities, check constraints, and revise the plan with the user.

Output A day-by-day itinerary, itemized budget, source links, and alternative options.

Literature Research Agent

A student exploring a research topic needs to understand key methods, findings, and open questions.

Find and read papers, compare methods and evidence, and follow up on missing information.

Output A cited literature review and a paper comparison table linked to supporting passages.

Job Search and Application Assistant

A graduate needs to find suitable roles and prepare applications that reflect their experience.

Read job postings, match requirements to a résumé, and tailor materials using verified experience.

Output A job shortlist with match reasons, application drafts, and a checklist of next steps.

Other project ideas are welcome. Define a clear user need and a useful result.

Sample Project: STORM

An open-source system that researches a topic and writes an article with citations.

Example input

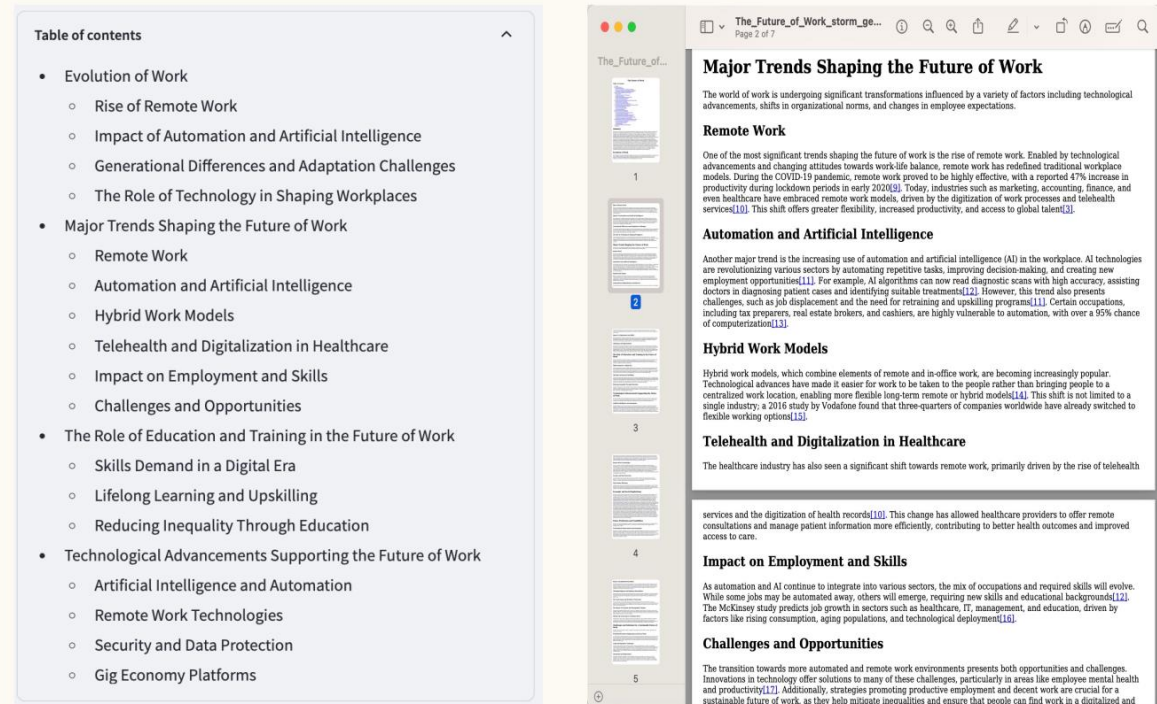
“The Future of Work”

Output

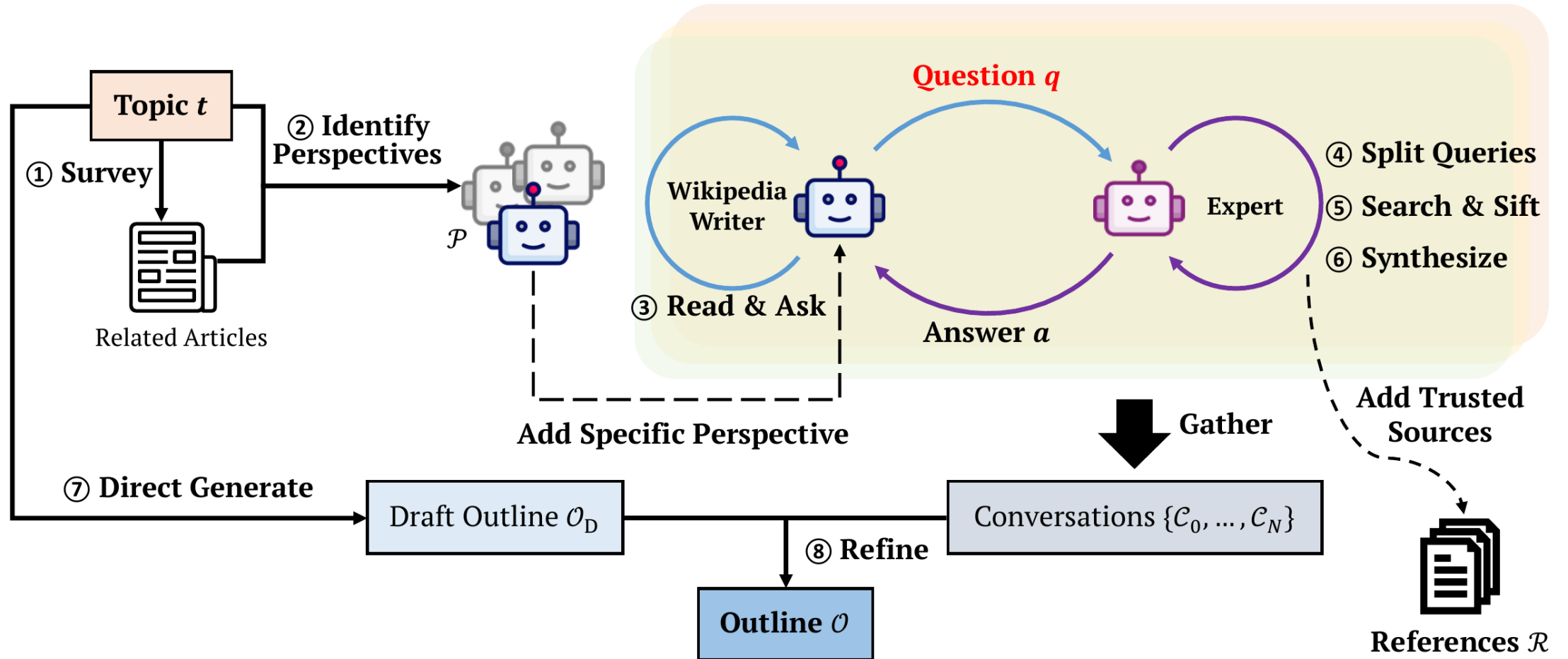
An organized article with a detailed outline and source citations.

Possible course extensions

Improve question selection.
Reduce latency and model calls.



Inside STORM: Research Workflow



Project Milestones

1. Team Formation (3–5 Students per Team)

Form a project team and confirm all members.
Align on shared interests and working expectations.

2. Topic Selection and Proposal (Due October 29)

Choose a focused task or scenario.
Each team must submit a **two-page proposal** covering the motivation, proposed system, and evaluation plan.

3. Project Development

Implement and evaluate the proposed system.
Refine the scope and approach based on progress and feedback.

4. Final Presentation

Present the completed system and evaluation results, give a short demo,
and submit the final code repository.