
COMPANION CHATBOT

AI-ASSISTED DISCOVERY, LOCAL ACADEMIC ARCHIVING AND GROUNDED EXPLANATIONS

INTERIM VIVA PRESENTATION-DEVELOPMENT AND EVALUATION

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BSc Applied Computing

Independent project (ACCA6020)

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PROBLEM & PROJECT OBJECTIVES

- Research is dispersed via academic discovery services.
- Lack of foundation can lead to AI-generated summaries that misrepresent sources.
- Goal: to be a transparent, affordable research partner for papers and books.
- Objectives: discovery → evidence-based explanation → local archive → evaluation.

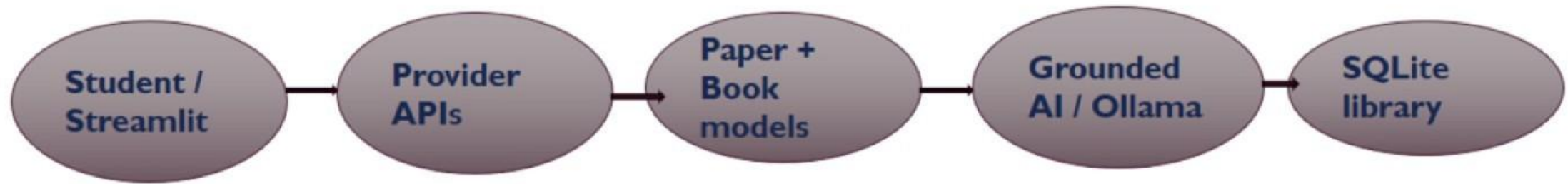
DESIGN & RESEARCH DECISIONS

- Papers: OpenAlex and Semantic Scholar APIs.
- Books: Open Library and Google Books metadata adapters
- Not full-text access to metadata & abstracts
- Google Scholar: intended outbound discovery link – no scraping.
- Design Principle: Provenance, Conservative Identity Matching, and Explicit Limitations

WHY A LOCAL AI MODEL?

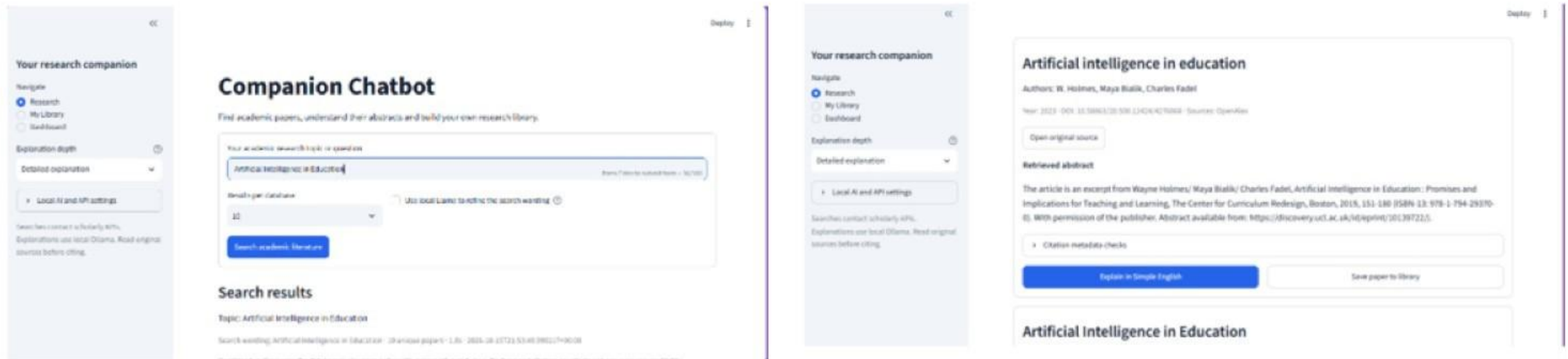
- Original proposal (July 2026): compare a local open-source LLM with commercial APIs like Open-AI or Anthropic.
- Implemented choice: Ollama + Llama 3.2 (3B) locally for abstract-based explanations
- Why local? No per request commercial model costs; better control on processing
- Trade-offs: local inference can be sluggish; evidence checks and human review still needed.
- Trade-offs: local inference may be slow; evidence checks and human review still needed.

METHODOLOGY & ARCHITECTURE OF THE SYSTEM



Iterative / Design Science approach Small increments Implement Test Maintain existing behaviour Document evidence

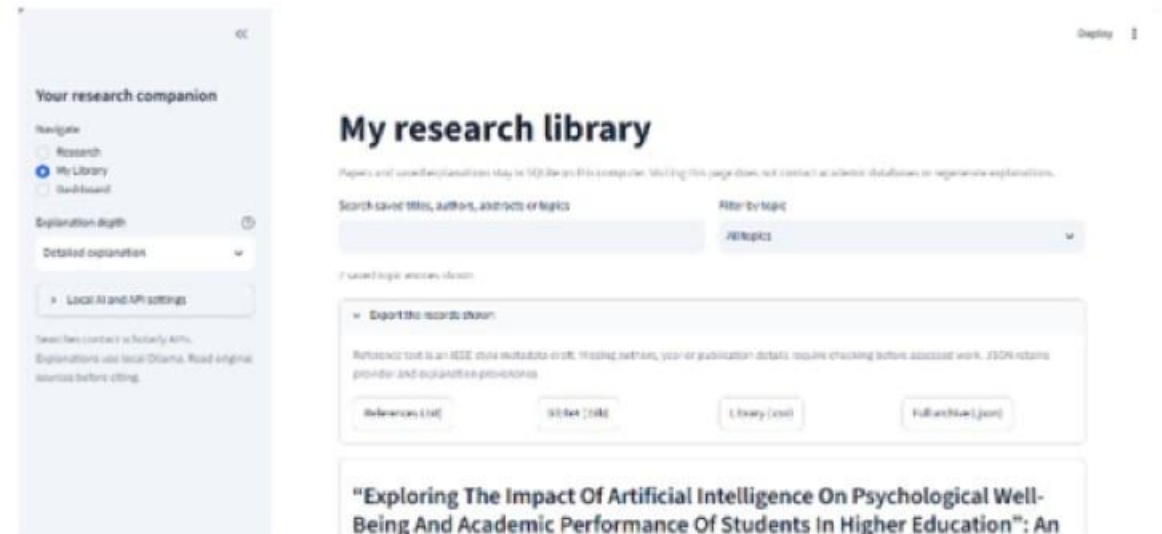
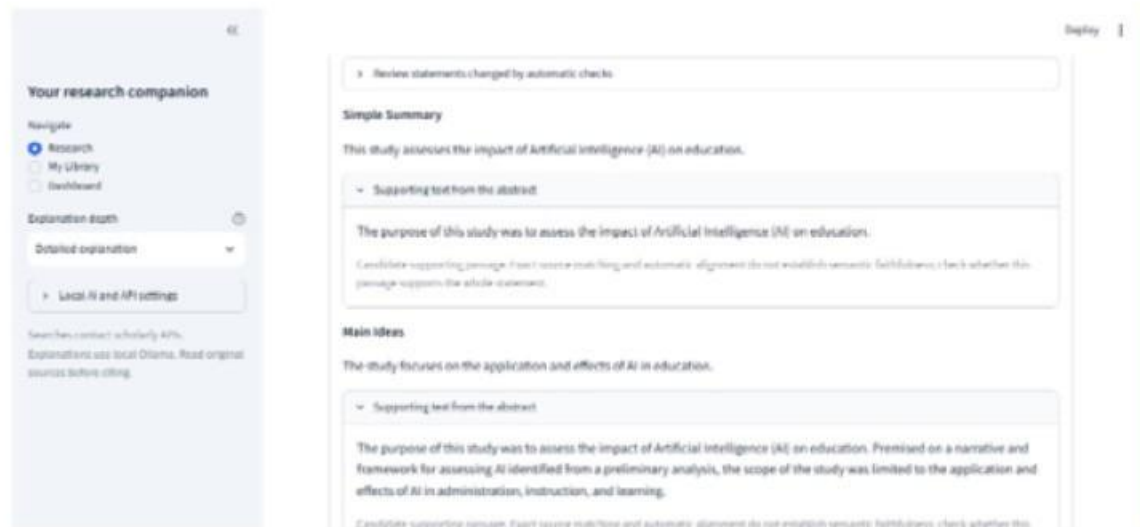
WORKING PROTOTYPE ACTUAL INTERFACE



1. Search: 10 unique results (example query)

2. Details of the paper and metadata of the source

WORKING PROTOTYPE ACTUAL INTERFACE 2



3. Explanation based on the abstract

4. Export and local library options

TECHNICAL PROOF AND IMPLEMENTATION

- • Book components: Google Books / Open Library adapters, Book model, ISBN validations and deduplication.
 - Last full regression suite report: 528 tests passed in 35.97 s (not academic correctness).
- • Open Library: a few successful live checks, but not many. Google Books: HTTP 503 backend Failed.
 - Personal archive now: 2 unique papers, 2 subjects, 1 stored explanation. Books not yet in UI.
- • Google Books: four live requests returned HTTP 503 (backendFailed); retrieval still not validated.

ORIGINAL PROPOSAL GANTT CHART

Phase (mapped objective)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Literature review & requirements (Obj. 1)																					
2. Architecture & API/LLM selection (Obj. 1)																					
3. Dev Sprint A – search & retrieval agent (Obj. 2)																					
4. Dev Sprint B – summarisation & local archive (Obj. 3)																					
5. Benchmark evaluation vs. reading lists (Obj. 4)																					
6. Data analysis & evaluation report (Obj. 4)																					
7. Final report drafting & referencing																					
8. Contingency, proofreading & submission																					

Original planning baseline from submitted proposal; progress comparison on next slide.

PLANNED VERSUS ACTUAL PROGRESS

Research, requirement and architecture	Almost completed	done
Local explanations and Paper workflow	Working and Integrated	implemented
Book provider adapters + model	implemented; UI: not integrated	partial
Book persistence & combined search	Not yet completed	delayed
Formal assessment & dissertation	Still to complete	upcoming

CONCLUSION AND FUTURE WORK

- Add Streamlit: paper / book / both search, book preservation and provider provenance
- Add book explanations if description data available. Check exports, dashboard.
- Finalise dissertation chapters, document limits, complete technical evaluation.
- Deadline for submissions: 4 December 2026. No unwarranted assessment statements.
- Final submission date: 4 December 2026.

CURRENT SNAPSHOT OF LOCAL ARCHIVE DASHBOARD



References

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- OpenAlex, “OpenAlex API documentation.
- Semantic Scholar, “Semantic Scholar Academic Graph API.”
- Open Library, “Open Library APIs.”
- Google, “Google Books APIs: Developer documentation.”
- Python Software Foundation, “Python 3 documentation”
- SQLite, “SQLite Online Backup API.”
- Streamlit, “Streamlit API reference.

DISCUSSION AND QUESTIONS

Thank you — any questions?