

CS-E4780 Course Project Evaluation Tables

Project 1. Efficient Pattern Detection over Data Streams (26 points)

Grading Table

	Topic (Weight)	Unacceptable (0)	Marginal (1)	Acceptable (2)	Exceptional (3)
Implementation	Functionality	System fails to process Citibike events or detect patterns.	Processes events but produces frequent errors; hot path detection unreliable.	Correctly detects hot paths under normal loads; occasional errors under bursts.	Robust hot path detection across all workloads; handles bursty streams reliably.
	Performance	Cannot sustain processing; latency unbounded.	Processes some bursts but latency grows significantly.	Meets latency bounds for most workloads; throughput adequate.	Consistently low latency and high throughput across all tested workloads.
	Scalability	Fails with larger datasets or multiple streams.	Handles only small datasets; struggles with workload growth.	Scales to larger portions of Citibike dataset with moderate efficiency.	Scales to full Citibike dataset with stable performance.
	Creative explorations	Evaluation based on how you explore the design space and how you structure the system. (Load Shedding Strategy, State Management & Partial Matches, ...)			
Report	System Design & Architecture	No clear description of system design.	Basic design; lacks support for real-time CEP needs.	Includes design for real-time data processing, metadata handling.	Well-architected design handling CEP, real-time, scalability.
	Implementation Explanation	Missing or unclear explanation.	Provides limited details on algorithms and data structures.	Clear explanation of algorithmic design, partial match structures, and complexity.	Detailed explanation with complexity analysis, design trade-offs, and rationale.
	Evaluation & Performance	No meaningful evaluation.	Basic evaluation; limited testing.	Evaluates recall under different latency bounds;	Comprehensive evaluation: recall vs. latency trade-off,

				basic scalability tests.	scalability across resources, CPU/GPU utilization.
	Academic Writing	Report is poorly structured and lacks coherence.	Basic structure but lacks clarity in motivation/ results.	Well-structured and clear, with minor issues in presentation or analysis. Citations format is consistent.	Professionally written, clear, and logically structured, strong analysis.
Teamwork and individual report	Topic (Weight)	Unacceptable (0)	Marginal (1)	Acceptable (2)	
	Individual report	No meaningful individual contributions documented.	Contributions described but unclear or incomplete.	Clear description of contributions and reflection.	
	Teamwork	Team collaboration is ineffective, and roles are unclear.	Some collaboration occurs, but roles and responsibilities are only partially defined.	Exemplary teamwork, with clear roles, efficient data management, and active collaboration.	

Project 1 Score Mapping

There are 26 points in total [Implementation (12) + report (12) + teamwork and individual report (2)]. The project points scale to course grading as follows.

Grade	Points
5	24 – 26
4	19 – 23
3	15 – 18
2	11 – 14
1	1 – 10
0	0

Project 2. Enhancing LLM Inference with GraphRAG (26 points)

Grading Table

	Topic	Unacceptable (0)	Marginal (1)	Acceptable (2)	Exceptional (3)
Implementation	Text2Cypher Improvement	Fails to translate natural language to Cypher.	Basic translation but frequent errors, no refinement.	Generates valid Cypher queries with minor corrections.	Robust Text2Cypher with dynamic few-shot selection, self-refinement, and rule-based post-processing.
	Caching & Performance	No caching; repeated queries always recomputed.	Basic caching but limited or error-prone.	Effective caching with measurable latency improvements.	Optimized LRU caching and pruning, smooth performance across pipeline.
	Functionality	Fails to connect LLM with graph knowledge base.	Basic retrieval from graph but incomplete results.	Retrieves relevant entities and relations with moderate success.	Integrate LLM with graph retrieval, enabling multi-hop reasoning.
	Creative explorations	Evaluation based on how you explore the design space and how you structure the system.			
Report	System Design & Architecture	No clear system architecture.	Basic architecture but lacks modularity.	Includes design choices for GraphRAG workflow (LLM, KG, Cypher).	Well-architected pipeline with modular components for query, retrieval, and reasoning.
	Implementation Explanation	Missing or unclear.	Basic description of modules.	Clear explanation hardware/cloud services, programming tools and each modules.	Detailed explanation of all components, optimization, and evaluation.
	Evaluation & Performance	No meaningful evaluation.	Basic evaluation, few queries tested.	Evaluation includes accuracy of queries and speedups.	Comprehensive evaluation: accuracy, latency, stage-by-stage breakdown with visualizations.
	Academic Writing	Poorly structured, incoherent.	Basic report with minimal clarity.	Well-structured, with clear	Professional report with strong analysis,

				motivation and results.	clarity, and proper citations.
Teamwork and individual report	Topic (Weight)	Unacceptable (0)	Marginal (1)	Acceptable (2)	
	Individual report	No meaningful individual contributions documented.	Contributions described but unclear or incomplete.	Clear description of contributions and reflection.	
	Teamwork	Team collaboration is ineffective, and roles are unclear.	Some collaboration occurs, but roles and responsibilities are only partially defined.	Exemplary teamwork, with clear roles, efficient data management, and active collaboration.	

Project 2 Score Mapping

There are 26 points in total [Implementation (12) + report (12) + teamwork and individual report (2)]. The project points scale to course grading as follows.

Grade	Points
5	24 – 26
4	19 – 23
3	15 – 18
2	11 – 14
1	1 – 10
0	0

Teamwork and Individual Report

A short teamwork and individual report answering the following questions should be written for each report

- 1) What were the most important decisions you and your group about the system design?
- 2) What were the most difficult and challenging parts during the design and implementation phase?
- 3) What was your contribution in the team? How would you characterize the team's functionality overall?

Final Score Mapping

The final course score is calculated as the average of the two project scores on the 1–5 scale. For example, if Project 1 is graded 3 and Project 2 is graded 5, the final score is

$$50\% * 3 + 50\% * 5 = 4.$$