Project – Developing a Multimedia Retrieval Application

Deliverables		Due Time
Proposal	Electronic submission	**11:59pm, 01 Apr (Tue, Week 06)**
	Hardcopy submission	In the lecture of Week 06
Final	Electronic submission	**11:59pm, 20 May (Tue, Week 12)**
	Hardcopy submission	In the lecture of Week 12
	Presentation	**6:00pm, 21 May (Wed, Week 12)**

INTRODUCTION

This assignment is worth **30%** of the total assessment of this course, including **10%** for the proposal phase (Proposal) and **20%** for the final phase (Final).

This is a **group** assignment, and each group consists of up to **FOUR** members (could be **more** members subject to the course coordinator's approval). Each group member must contribute to the assignment equally and the members will be awarded the same marks. Under certain circumstances, adjustment of marks may happen to group members at the discretion of the course coordinator. If you hope to complete the assignment by yourself or with more members, you should first consult with course coordinator in written form.

TASK

You are required to identify, develop, and present a multimedia retrieval application such as retrieval, browsing, summarization, recommendation, and analytics applications.

Sample Applications

1. Y. H. Lei, et al., Where Is Who Large-Scale Photo Retrieval by Facial Attributes and Canvas Layout, SIGIR, 2012. https://dl.acm.org/doi/10.1145/2348283.2348377
2. T.-J. Fu, et al., Attentive and Adversarial Learning for Video Summarization, IEEE Winter Conference on Applications of Computer Vision (WACV), 2019. https://tsujuifu.github.io/pubs/wacv19_vsum-ptr-gan.pdf
3. J. Wang, et al., Knowledge Enhanced Sports Game Summarization, ACM International Conference on Web Search and Data Mining (WSDM), 2022. https://arxiv.org/pdf/2111.12535.pdf
4. K.-H. Huang, et al., Generating Sports News from Live Commentary: A Chinese Dataset for Sports Game Summarization, Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics (AACL), 2020. https://aclanthology.org/2020.aacl-main.61/
5. F. Xu, et al., Metric Learning with Equidistant and Equidistributed Triplet-based Loss for Product Image Search, WWW, 2020. https://dl.acm.org/doi/10.1145/3366423.3380094
6. Y. Hao, et al., An End-to-End Model for Question Answering over Knowledge Base with Cross-Attention Combining Global Knowledge, ACL, 2020. https://www.aclweb.org/anthology/P17-1021.pdf

This assignment should be completed in two phases, proposal phase and final phase. **It is highly encouraged to conduct thorough research and come up with a solid plan in the proposal phase.**

Proposal Phase

You are required to identify an application and propose a well-designed solution and a solid plan for the application. While developing the application, you need to emphasize the aspects of your technical focus (e.g., technical solution and algorithms). In the proposal, you need to articulate the following components, but not limited to:

1. Application: background, related work, significance, requirements, and etc
2. Solutions: technical approaches to finish this project
3. Plan: tasks and schedule
4. Reflection on proposal writing

Note that it is **NOT necessary** to follow the above headings in your proposal. You could imagine that the purpose of the proposal is to convince readers of your dream project. A good proposal will at least tell readers: What is your application about? Why is your application important? What is the relationship between your application and similar applications or products? What are the specific functions of your application? What are the solutions? What is the timetable or schedule of your implementation? .....

In the proposal, a section of **Reflection on Proposal Writing** is required to explain what resources you have consulted and what guidelines you have applied to during the preparation of your proposal. You are strongly encouraged to obtain some guidance on proposal writing from a wide range of resources (e.g., books, articles, and websites on how to write a proposal).

The proposal file must be of **Adobe Acrobat Portable Document Format (*.pdf)** format. No other file format is accepted. The proposal must **NOT** exceed **TWELVE** pages including references (single space and font size 12 for body text). A hardcopy of the proposal submitted is also required for submission.

Final Phase

You are required to complete a multimedia retrieval application and deliver: 1) a final workable application (including all the source codes), 2) a short (around 3 to 5 minutes) introduction video of your project, 3) a readme or manual, and 4) a final report and presentation slide.

The video must be compatible with the VLC media player. The report and manual files must be of **Adobe Acrobat Portable Document Format (*.pdf)** format. No other file format is accepted. The final report must **NOT** exceed **TWELVE** pages including references (single space and font size 12 for body text). A hardcopy of the final report together with the manual is also required for submission.

The report should include a summary or abstract and at least provides: Introduction (e.g., What is your application about? Why is your application important?), Related Work (e.g., What is the relationship between your application and similar ones?), Methodology or Solution (e.g., What are the specific functions of your application? What are the solutions?),

and Results (e.g., What are the datasets and What are the outcomes or results?). You are encouraged to follow the template of scientific articles listed in Sample Applications.

The manual is to guide a potential user on how to set up the working environment of your application and re-produce the results presented in your report.

MARKING SCHEME

Proposal (10 marks)

1. (3 marks) Application: creativity, challenge, and novelty of the application domain.
2. (5 marks) Solutions: quality of the technical approach.
3. (1 marks) Plan: clarity of the individual tasks.
4. (1 marks) Reflection on proposal writing.

Final (20 marks)

To pass this phase of the assignment, your application should at least be workable.

1. (12 marks) Application and technical solution
   Assess the creativity, challenge, and quality of the application and solution.
2. (3 marks) Documentation: Manual and Assignment Report and Manual
   You need to provide both a manual to document information which will assure other users to compile, install, and run your programs, and an assignment report document including background, system design, approach, results, discussions, and etc.
3. (2 marks) Introduction video of your project.
4. (3 marks) Presentation (Refer to the Notes to Presentation in the Appendix)
   You need to give an oral presentation on your system in the lecture of the due week and the presentation will be marked in terms of clarity, understanding of the topic, and presentation skills. The presentation file must be included in the electronic submission.

SUBMISSION

- One submission is required from each group. Please **use your student ID (SID) and unikey, but NOT your full name,** in the documents such as reports and source codes.
- For electronic submissions, choose the correct submission under the section *Assignments*: ***Proposal*** and ***Final***.
- For the electronic submission of ***Final***,
  - Submit your report to ***Final [Report Only]***.
  - Zip all your project files (e.g. final output such as programs, source codes, introduction video, readme file/manual, presentation slides, and report) and use your unikey as the name of the zip file.
  - If the zip file is less than 20MB, submit it to ***Final [All Materials]***.
  - If the zip file is greater than 20MB, host the zip file on the Web (e.g., OneDrive or Dropbox) and email the course coordinator the URL of the zip file for downloading **without sign-in**. The email subject must consist of ***[COMP5425 Final]*** followed by your unikey. Otherwise, your submission may be filtered.
- There may be a penalty if 1) you do not include your SID, unikey, and the URL of the complete zip file (if applicable), in your documents, 2) your zip file cannot be accessed and unzipped successfully, or 3) your programs cannot be compiled and run successfully, or your artwork and introduction video cannot be played/ reproduced successfully.

- Refer to course materials and relevant policies on assessment issues, such as **late submission**, **special consideration**, and **plagiarism**.

RESOURCES

1. ACM SIGIR Conference: https://dblp.uni-trier.de/db/conf/sigir/index
2. The Web Conference: https://dblp.uni-trier.de/db/conf/www/index
3. RecSys Conference: https://dblp.uni-trier.de/db/conf/recsys/index
4. International Conference on Information and Knowledge Management (CIKM): https://dblp.org/db/conf/cikm/index.html
5. ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD): https://dblp.org/db/conf/kdd/index.html
6. ACM International Conference on Web Search and Data Mining (WSDM): https://dblp.org/db/conf/wsdm/index.html
7. ACM International Conference on Multimedia: https://dblp.uni-trier.de/db/conf/mm/index
8. IEEE Conference on Multimedia & Expo: https://dblp.uni-trier.de/db/conf/icmcs/index.html
9. Conferences on NLP
   ACL (https://dblp.org/db/conf/acl/index.html), COLING (https://dblp.org/db/conf/coling)

Appendix – Notes to Presentation

The presentation session consists of three sequential stages: Presentation, Demo, and Voting.

1. Presentation

In this stage, each group has maximally **8 minutes** to present the assignment using the presentation material submitted. The presentation will be generally starting at 6:00pm from Group 1 in the weekly lecture room. You should be familiar with the presentation facility in the room. Detailed presentation schedule will be available in due course.

Either the computer in the lecture room or your personal laptop is allowed for presentation. If you use the computer in the lecture room, your presentation materials should be compatible with the settings in the lecture room and **be copied to the computer before 6:00pm on the presentation day**. If you use your personal laptop, you must 1) comply with safety regulations of the University of Sydney, and 2) have successful trial with the presentation facilities available in the lecture room.

Any delay may lead to penalty in marking, or even losing presentation opportunity. Should you have any difficulty, please feel free to contact Lecturer.

2. Demo

In this stage, each group is asked to demonstrate their projects and to answer questions from fellow students in the labs. Make sure your group ID can be easily spotted so that it is convenient for your fellow students to fill the voting form.

3. Voting

In this stage, each group (**NOT** each person) has to fill the voting form (**the last page of this document and needs to be printed by yourself**) by identifying top 3 projects with suitable justification and submit the filled form to the lecturer before your leaving.

This presentation session which is worth 3 marks of the 20 marks for the whole assignment will be assessed in terms of Presentation content and skills (e.g. logical flow, understanding, visual/audio aids, time, pace, and eye contact), Demo (e.g. clear explanation and appropriate support), and Voting (e.g. the quality of justification for the choice).

Project Voting Form

Voting Group	Group ID	
	Member Name(s)	
1st Rank	Group ID	
	Member Name(s)	(optional if it is difficult to get it)
	Project Title	
	Comments	
2nd Rank	Group ID	
	Member Name(s)	(optional if it is difficult to get it)
	Project Title	
	Comments	
3rd Rank	Group ID	
	Member Name(s)	(optional if it is difficult to get it)
	Project Title	
	Comments	