SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCST 1043
Sem:……. Session:……

SECTION A: Project Information.

Program Name: **Masters of Science (Data Science)**

Subject Name: **Project 1 (MCSD 6215)**

Student Name: LIU MINGJIE

Metric Number: MCS241019

Student Email & Phone: mingjie@graduate.utm.my 175701066

Project Title: Sentiment Analysis and User Behavior Prediction in Social Networks

Supervisor 1:

Supervisor 2 / Industry Advisor(if any):

SECTION B: Project Proposal

Introduction:
Social networks have become an integral part of our daily life, serving as platforms for communication, information sharing, and social interaction. Analyzing user-generated content and predicting user behavior in social networks is important in many applications, such as targeted advertising, content recommendation, and social network analysis.

Problem Background:
Social networks are the biggest producers of data in the form of text, images, and videos. The sentiment understanding and user behavior prediction from this data is challenging due to the complexity and diversity of human language and behavior.

Problem Statement:
In the context of social networks, the absence of effective methods for sentiment analysis and user behavior prediction hinders theDevelopment of personalized experiences and targeted marketing strategies. Current approaches generally do not consider contextual information and user interactions, leading to less accurate results.

Aim of the Project:
This project will seek to:

Develop and evaluate a model for sentiment analysis in social network data.

Predict user behavior in social networks using machine learning techniques.

Identify key factors influencing user behavior in social networks.

Evaluate the effectiveness of the sentiment analysis and user behavior

prediction models through experiments and analysis.

Objectives of the Project:

1. Collect and preprocess social network data, including text, images, and videos.
2. Develop a sentiment analysis model using natural language processing techniques such as sentiment lexicons, machine learning algorithms, or deep learning models.
3. Develop a user behavior prediction model using machine learning techniques such as classification, regression, or sequence prediction models.
4. Identify key factors influencing user behavior in social networks through feature analysis and model interpretation.
5. Evaluate the effectiveness of sentiment analysis and user behavior prediction models through the use of various metrics like accuracy, precision, recall, and F1 score.
6. Documenting of research with findings in detail on a report.

Scopes of the Project:

In the project, focus will be placed on a specific social network platform and target user group. Data collection shall be restricted to public data only, and personally identifiable information shall require prior consent from the users. The models developed for sentiment analysis and the prediction of user behavior will be prototypical; their implementation will also be limited to the research environment only.

Expected Contribution of the Project:

The outcomes of this project will contribute to effective methodologies in sentiment analysis and user behavior prediction in social networks. The models that are developed will help provide insight for businesses, researchers, and policy-makers with respect to the behavior of users and also allow the development of marketing strategies targeting such behaviors.

Project Requirements:

Software:	Python, R, Jupyter Notebook, MySQL, Tableau, or other relevant tools.
Hardware:	Laptop or desktop computer with sufficient processing power and storage capacity.
Technology/Technique/ Methodology/Algorithm:	Natural language processing, sentiment analysis, machine learning, deep learning, user behavior modeling, social network analysis.

Type of Project (Focusing on Data Science):

[ ] Data Preparation and Modeling

[ ] Data Analysis and Visualization

[√] Business Intelligence and Analytics

[ ] Machine Learning and Prediction

[ ] Data Science Application in Business Domain

Status of Project:

[ ] New

[ ] Continued

If continued, what is the previous title?

SECTION C: Declaration

I declare that this project is proposed by:

[ ] Myself

[ ] Supervisor/Industry Advisor ( )

Student Name:

Signature **Date**

SECTION D: Supervisor Acknowledgement

The Supervisor(s) shall complete this section.

I/We agree to become the supervisor(s) for this student under aforesaid proposed title.

Name of Supervisor 1:

Signature **Date**

Name of Supervisor 2 (if any):

Signature **Date**

SECTION E: Evaluation Panel Approval

The Evaluator(s) shall complete this section.

Result:

[ ] FULL APPROVAL

[ ] CONDITIONAL APPROVAL (Major)*

[ ] CONDITIONAL APPROVAL (Minor)

[ ] FAIL*

***** Student has to submit new proposal form considering the evaluators' comments.

Comments:

Name of Evaluator 1: .....

.....

Signature **Date**

Name of Evaluator 2: .....

Signature **Date**

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Project1 Proposal Form MSc (Data Science)