



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCST1043
Sem: 2 Session: 2024/25

SECTION A: Project Information.

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

Subject Name: **Project 1 (MCST1043)**

Student Name: Saeed Mubarak Alshahrani

Metric Number: MCS231038

Student Email & Phone: Salshahrani1413@gmail.com

Project Title: Analyzing the Evolution of In-Demand Skills in the Saudi Job Market Using Machine Learning

Supervisor 1: _____

Supervisor 2 / Industry
Advisor(if any): _____

SECTION B: Project Proposal

Introduction:

The labor market in Saudi Arabia has been undergoing significant transformations driven by Vision 2030, rapid technological development, and global shifts. These changes are influencing the types of skills that are in demand. By utilizing machine learning, this project aims to analyze trends in job postings to understand how skill demand has evolved over time.

Problem Background:

Despite the availability of vast labor market data, there is a lack of structured, data-driven studies that track skill demand trends over time in Saudi Arabia. Most job seekers and institutions make decisions based on outdated reports or subjective judgment. The project seeks to bridge this gap by leveraging data science to deliver timely, accurate insights on the most in-demand skills, supporting better career and academic planning.

Problem Statement:

The lack of accessible, data-driven insights into evolving job skill requirements in Saudi Arabia hinders informed decision-making for workforce development. This project aims to use machine learning to analyze large-scale job advertisement data to detect skill trends and support data-driven career and education strategies.

Aim of the Project:

To analyze the changes in demand for specific skills in the Saudi job market using machine learning models, and provide insights that help align workforce capabilities with market needs.

Objectives of the Project:

- To collect job posting data from online platforms.
- To analyze historical data to identify trends in skill demand.
- To apply machine learning models to predict future in-demand skills.

Scopes of the Project:

- Focus on job data from Saudi job market (LinkedIn, Bayt, Taqat).
 - Use of Natural Language Processing (NLP) and classification models.
 - Use of Python and Power BI for analysis and visualization
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Expected Contribution of the Project:

- Provide a comprehensive visualization of skill demand evolution in the Saudi market.
 - Deliver a predictive model to forecast future skill trends.
 - Support job seekers and universities in aligning their skills and curricula with market needs.
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Project Requirements:

Software: Phyton, Power BI and SQL

Hardware: Standard personal computer

Technology/Technique/
Methodology/Algorithm: Exploratory Data Analysis, Visualisation

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: Saeed Mubarak Alshahrani

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.

.....
Date

.....
Date

SECTION E: Evaluation Panel Approval

The Evaluator(s) shall complete this section.

Result:

<input type="checkbox"/> FULL APPROVAL	<input type="checkbox"/> CONDITIONAL APPROVAL (Major)*
<input type="checkbox"/> CONDITIONAL APPROVAL (Minor)	<input type="checkbox"/> FAIL*

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

Comments:

