



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

**SCHOOL OF COMPUTING**  
Faculty of Engineering

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

## SECTION A: Project Information.

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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

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### Introduction:

Vision 2030, the quick advancement of technology, and worldwide changes have all contributed to the substantial changes in the Saudi labor market. The kinds of skills that are in demand are being impacted by these changes. This project uses machine learning to examine job posting trends in order to determine how skill demand has changed over time.

### Problem Background:

Large amounts of labor market data are available, but structured, data-driven studies that monitor changes in Saudi Arabia's skill demand over time are scarce. The majority of employers and job seekers base their choices on shaky information or personal opinion. By using data science to provide timely and accurate insights on the most in-demand skills, the project aims to close this gap and promote improved academic and career planning.

### Problem Statement:

Making well-informed decisions regarding workforce development is hampered by the absence of easily accessible, data-driven insights into Saudi Arabia's changing job skill requirements. The goal of this project is to support data-driven career and educational strategies by using machine learning to analyze large amounts of job advertisement data in order to identify skill trends.

### Aim of the Project:

to use machine learning models to examine shifts in the demand for particular skills in the Saudi labor market and offer insights that assist in matching workforce competencies with market demands.

### Objectives of the Project:

- To gather information about job postings from internet sources.
- To determine trends in the demand for skills by analyzing historical data.
- To forecast future in-demand skills using machine learning models.

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**Scopes of the Project:**

- Pay attention to Saudi job market data (LinkedIn, Bayt, Taqat).
  - The application of classification models and natural language processing (NLP).
  - Analysis and visualization using Power BI and Python
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**Expected Contribution of the Project:**

- Give a thorough illustration of the changes in skill demand in the Saudi market.
  - Provide a predictive model to predict skill trends in the future.
  - Assist universities and job seekers in matching their curricula and skill sets to industry demands.
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**Project Requirements:**

Software: Phyton, Power BI and SQL

Hardware: Standard personal computer

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

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**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

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**Status of Project:**

☒ New

☐ Continued

If continued, what is  
the previous title?

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**SECTION C: Declaration**

**I declare that this project is proposed by:**

☒ Myself

☐ Supervisor/Industry Advisor ( )

Student Name: Saeed Mubarak Alshahrani

Signature

Date

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**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.**

[ ] FULL APPROVAL

[ ] CONDITIONAL APPROVAL (Major)\*

[ ] CONDITIONAL APPROVAL (Minor)

[ ] FAIL\*

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

Name of Evaluator 1:

.....  
Date

Name of Evaluator 2:

.....  
Date