



FINAL YEAR PROJECT REPORT

NEXA CAREER

**In fulfillment of the requirement
For degree of
BS (COMPUTER SCIENCES)**

By

MUHAMMAD SUHAIB BHATTI	70153 (BSCS)
MUHAMMAD HADI	70148 (BSCS)
SAAD ULLAH KHAN	70136 (BSCS)

SUPERVISED

BY

DR. GHULAM MUHAMMAD

BAHRIA UNIVERSITY (KARACHI CAMPUS)

SPRING-2024

DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

Signature : M Suhaib

Name: MUHAMMAD SUHAIB BHATTI

Reg No. : 70153

Signature : Hadi

Name : MUHAMMAD HADI

Reg No. : 70148

Signature : Saad

Name : SAAD ULLAH KHAN

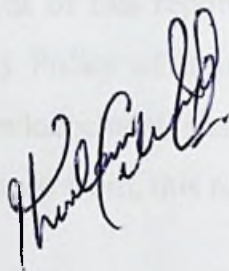
Reg No. : 70136

Date : 20th May, 2024

APPROVAL FOR SUBMISSION

We certify that this project report entitled “NEXA CAREER” was prepared by **MUHAMMAD SUHAIB BHATTI, MUHAMMAD HADI, SAAD ULLAH KHAN** has met the required standard for submission in partial fulfillment of the requirements for the award of Bachelor of Science in **Computer Science** at Bahria University, Karachi.

Approved by,



Signature : _____

Supervisor : Dr. GHULAM MUHAMMAD

Date : 20th May, 2024

NEXA CAREER

ABSTRACT

This project addresses the challenge of career guidance for Pakistani students by developing an AI-powered career Counselling platform. The platform caters to two distinct user groups: Students transitioning from Matriculation (10th grade) or O-Levels Intermediate (11th & 12th grade) or A-Levels, seeking guidance in subject selection and college enrollment, students transitioning from Intermediate (12th grade) or A-Levels to university, seeking assistance in university and program selection, and students with new career aspirations.

The copyright of this report belongs to Bahria University according to the Intellectual Property Policy of Bahria University BUORIC-P15 amended on April 2019. Due acknowledgement shall always be made of the use of any material contained in, or derived from, this report.

career landscape.

In addition to the chatbot, the platform offers a website that houses the chatbot and provides a user interface. The website empowers students to craft professional resumes, further enhancing their career preparation.

This report details the development process of the platform, including the functionalities of the chatbot and website. It also explores the design and content of the database used by the chatbot. Finally, the report discusses future considerations for the platform's development, aiming to equip it as a valuable resource for Pakistani students navigating crucial academic and career decisions.

NEXA CAREER

ABSTRACT

This project addresses the challenge of career guidance for Pakistani students by developing an AI-powered career Counselling platform. The platform caters to two distinct user groups; Students transitioning from Matriculation (10th grade) or O-Levels to Intermediate (11th & 12th grades) or A-Levels, seeking guidance in subject selection and college enrolment, students transitioning from Intermediate (12th grade) or A-Levels to university, seeking assistance in university and program selection aligned with their career aspirations.

The platform's core functionality is a chatbot that interacts with users conversationally. Users pose career-related questions, and the chatbot delivers targeted responses based on its comprehensive database specifically curated for the Pakistani educational and career landscape.

In addition to the chatbot, the platform offers a website that houses the chatbot and provides an additional resume builder tool. This tool empowers students to craft professional resumes, further enhancing their career preparation.

This report details the development process of the platform, including the functionalities of the chatbot and website. It also explores the design and content of the database used by the chatbot. Finally, the report discusses future considerations for the platform's development, aiming to equip it as a valuable resource for Pakistani students navigating crucial academic and career decisions.

TABLE OF CONTENTS

DECLARATION	ii
APPROVAL FOR SUBMISSION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF APPENDICES	ix
LIST OF TABLES	x
LIST OF FIGURES	xi
CHAPTER	
1. INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	1
1.3 Aims and Objectives	2
1.4 Scope of Project	2
2. LITERATURE REVIEW	4
2.1 Challenges in Career Guidance for Pakistani Students	4
2.2 AI-powered Chatbots in Career Counselling	4
2.3 Existing Career Counselling Platforms	5
2.4 Mindler	6
2.4.1 IdreamCareer	6
2.4.2 Career Guide	6
2.5 Ethical Considerations of AI in Education	7
2.6 Literature Review Table	9
3. REQUIREMENTS SPECIFICATION	11
3.1 Existing System	11
3.2 Proposed System	12
3.3 Requirement Specifications	12

3.4	Functional Requirements	12
3.4.1	Non-Functional Requirements	13
3.5	Use Cases	14
3.5.1	Exploring Career Options	14
3.5.2	Researching Universities	14
3.5.3	Long-Term Career Planning	15
4. DESIGN AND METHODOLOGY		16
4.1	User-Centred Design (UCD)	16
4.2	OpenAI API Integration	16
4.3	User Flow Diagrams	17
4.3.1	Chat With Nexa	17
4.3.2	Resume Building	18
4.3.3	University/College Recommendation	18
5. SYSTEM IMPLEMENTATION		19
5.1	Technology Stack	19
5.1.1	Front-End Development	19
5.1.2	Back-End Development	19
5.1.3	Machine Learning	19
5.1.4	Database	19
5.1.5	API Integration	20
5.2	Development Process	20
5.2.1	Agile Development	20
5.2.2	Requirement Gathering and Analysis	20
5.2.3	System Design and Architecture	20
5.2.4	Development and Implementation	20
5.2.5	Testing and Integration	20
5.2.6	Deployment and Maintenance	21
5.3	Testing Strategy	21
5.3.1	Unit Testing	21
5.3.2	Integration Testing	21
5.3.3	Functional Testing	21

5.3.4	Non-Functional Testing	21
5.3.5	User Acceptance Testing (UAT)	21
6. SYSTEM TESTING AND EVALUATION		22
6.1	Testing Strategy	22
6.2	Evaluation Plan	22
6.3	Security Testing	23
7. CONCLUSION		24
7.1	Bridging the Guidance Gap	24
7.2	Empowering Student Success	24
7.3	Future Development	24
REFERENCES		26