

# **Configuration Manual**

MSc Research Project MSc. Artificial Intelligence for Business

> Joshua Komolafe Student ID: x22124926

School of Computing National College of Ireland

Supervisor: Victor Del Rosal

#### National College of Ireland



#### **MSc Project Submission Sheet**

#### School of Computing

	Joshua Komolafe	
Student		
Name:		
	x22124926	
Student		••••••
ID:		
_	MSc. Artificial Intelligence for Business	2023
Programm		Year:
e:		
	MSc. Research Practicum	
Module:		
<b>T</b> /	Victor Del Rosal	
Lecturer:		••••••
S		
Submission Due Deter	1 31/01/2024	
Due Date:		
	Evaluitation of Natural Language Dressesing for Ei	anneigh Audite
Drainat	Exploitation of Natural Language Processing for Fil	Iditital Audits
Titler		
	414	7
word	Tit Daga County	7
Count:	rage Count:	•••••••••••••••••••••••••••••••••••••••

I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.

<u>ALL</u> internet material must be referenced in the bibliography section. Students are required to use the Referencing Standard specified in the report template. To use other author's written or electronic work is illegal (plagiarism) and may result in disciplinary action.

Signature	•
:	
	31/01/2024
Date:	

#### PLEASE READ THE FOLLOWING INSTRUCTIONS AND CHECKLIST

Attach a completed copy of this sheet to each project (including multiple copies)	
Attach a Moodle submission receipt of the online project submission, to each project	
(including multiple copies).	
You must ensure that you retain a HARD COPY of the project, both for your own	
reference and in case a project is lost or mislaid. It is not sufficient to keep a copy on	
computer.	

Assignments that are submitted to the Programme Coordinator Office must be placed into the assignment box located outside the office.

Office Use Only	
Signature:	
Date:	
Penalty Applied (if applicable):	

# **Configuration Manual**

### Joshua Komolafe Student ID: x22124926

### **1** Introduction

This configuration manual provides guidance for replicating SwiftAuditAI bot within the NCI research project. It also outlines the process for designing and implementing the bot.

### 2 Software requirements

The SwiftAuditAI is built on poe.com and modelled with Claude-2-100k, a Large Language Model (LLM) that is powered by Anthropic with a subscription fee paid to poe.com to use this model without limitations. The survey for the bot was carried out with a timer to check speed and the BERT Model and Cosine similarity to check for contextual accuracy using a python code on the Google Colab environment.



÷	→ C	S colab.research.google.com/drive/1zczMzfD7lfPPeIEZMNwg6-srGLJG3-HP	☆ É		0	:
:=	+ Cod	e + Text All changes saved	V RAM	-	¢ .	,
	3s <b>O</b>	<pre>ai_embedding = bert_encode(ai_response, model, tokenizer) # Calculate_button.on_click(calculate_bert_contextual_accuracy)</pre>	d AI responses	.")	2 1 2	
<>	E	tokenizer_config_json: 100%       28.0/28.0 (00.00~00.00, 152B/s]         vocab.txt: 100%       232k/232k (00.00~00.00, 17.8MB/s]         tokenizerjson: 100%       466k/466k (00.00~00.00, 5.31KB/s]         config_json: 100%       570/570 (00.00~00.00, 5.31KB/s]         model safetensors: 100%       440M/440M (00.05~00.00, 72.0MB/s]         Human Re       A         Al Response:				
		✓ <sup>33s</sup> completed at 11:36AM Figure 2			•	×
		I Iguie 2.				

# 3 Hardware Requirements

The project was implemented under the following configurations:

wafe-PC ire AV15-52		Rename this PC
Device specific	tations	Сору
Device name	Oluwafe-PC	
Processor	12th Gen Intel(R) Core(TM) i7-1255U 1.70 GHz	
Installed RAM	16.0 GB (15.7 GB usable)	
Device ID	EA69BB8C-8BEC-422B-9579-6BFD5E1E5238	
Product ID	00342-22052-47343-AAOEM	
System type	64-bit operating system, x64-based processor	
Pen and touch	INO DEN OF LOUCH INDUL IS AVAIIADIE TOF LINS DISDIAV	
ated links Dom	ain or workgroup System protection Advanced system settings	
ated links Dom Windows spec	ain or workgroup System protection Advanced system settings	Сору
ated links Dom Windows spec Edition	ain or workgroup System protection Advanced system settings ifications Windows 11 Home	Сору ^
ated links Dom Windows spec Edition Version	ain or workgroup System protection Advanced system settings ifications Windows 11 Home 23H2	Сору
ated links Dom Windows spec Edition Version Installed on	ain or workgroup System protection Advanced system settings ifications Windows 11 Home 23H2 23/01/2023	Сору
ated links Dom Windows spec Edition Version Installed on OS build	ain or workgroup System protection Advanced system settings ifications Windows 11 Home 23H2 23/01/2023 22631.2861	Сору
Ated links Dom Windows spect Edition Version Installed on OS build Experience	ain or workgroup System protection Advanced system settings  ifications  Windows 11 Home 23H2 23/01/2023 22631.2861 Windows Feature Experience Pack 1000.22681.1000.0	Сору ^
ated links Dom Windows spect Edition Version Installed on OS build Experience Microsoft Serv Microsoft Serv	ain or workgroup System protection Advanced system settings ifications Windows 11 Home 23H2 23/01/2023 22631.2861 Windows Feature Experience Pack 1000.22681.1000.0 icces Agreement ware Licence Terms	Сору ^

Figure 3

# 4 Dataset Description

Dataset1 (Suzano Consolidated Financial Statements) Dataset2 (International Standard on Auditing (Ireland) 700 Updated October 2023 Dataset3 (International Financial Reporting in your Pocket by Deloitte)

### 5 Model Preparation

The initial step involved collecting the required datasets, which included financial statements from Suzano and standards from the International Auditing and Accounting Organization.

The second step removed unwanted content, like the auditor's report, to make the AI solution independent of human judgments.

The third step had the AI system, called SwiftAuditAI, upload the datasets except for the one to be audited to its knowledge base.

The fourth step prompted SwiftAuditAI to arrange financial figures from statements into clearly separated columns using pipe symbols to improve readability for its analysis.

The fifth step was the modeling process, where SwiftAuditAI's behavior was determined by prompts fed to its Claude-2-100k model. This model drew from the knowledge base to inform responses based on a custom temperature of 0, ensuring strictly accurate instead of abstract answers.

The sixth step evaluated both the AI system and human performance on speed and accuracy to assess the results



Figure 4

# 6 Design Specification



Figure 5

# 7 Design Implementation

SwiftAuditAI was implemented as a chatbot on the Poe platform using the Claude-2-100k large language model. The user interface was Poe's chat function, allowing users to upload financial statements PDFs. Based on prompts, answers were generated from Poe's knowledge base where relevant data was stored and the LLM. The bot's temperature was set to zero to avoid abstraction in responses. It was given a profile name, photo, and welcome message for context. The hardware used had 16GB RAM, 1TB hard drive, and 12th Gen Intel Core i7-1255U 1.70GHz processor.



Figure 6



Figure 7

# 8 Design Implementation



Figure 9

# References

Dataset1 (Suzano Consolidated Financial Statements) – Source: https://s201.q4cdn.com/761980458/files/doc\_news/2023/02/4Q22/2022-12-DFP-EN.pdf

Dataset2 (International Standard on Auditing (Ireland) 700 Updated October 2023) – Source: <u>https://iaasa.ie/wp-content/uploads/2023/10/ISA\_700\_UpdatedOct2023.pdf</u>

Dataset3 (International Financial Reporting in your Pocket by Deloitte) – Source: <u>https://www.iasplus.com/en/publications/global/ifrs-in-your-pocket/2023/at\_download/file/IFRS%20in%20your%20pocket%20-%202023.pdf</u>