Configuration Manual

MSc Research Project
Data Analytics

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MSc Project Submission Sheet

School of Computing

Student Name: ……. …… Sebin Chembottikkal Sunny……

Student ID: ……X21177261…….……

Programme: …… Data Analytics…… **Year:** ……2023……..

Module: ……MSc Research Project…….……

Lecturer: …… Harshani Nagahamulla…….……

Submission Due Date: ……14/12/2023…….……

Project Title: …… Enhancing Forest Fire Detection: Integrated CNN And LSTM with Advanced Techniques ……

Word Count: ……647…… **Page Count:** ……5……..……..……

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.
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Configuration Manual

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1 Introduction

Configuration manuals consist of detailed information or instructions on how to set up a system. The main aim of the configuration manual is to provide a complete outline of how to run the system for this research. Additionally, it specifies the configuration required for the machine to build and run the models. The manual also covers the packages that are required for a smooth process of this research.

2 System Specifications

This section covers the specification of the system that is required to run the codes and model. The information contained in this section is functionality ,design and the other technical characteristics. **Figure 1** represents the system configuration used to run this project.

Item	Value
OS Name	Microsoft Windows 11 Home Single Language
Version	10.0.22631 Build 22631
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	SEBIN_CHEMPOTTY
System Manufacturer	ASUSTeK COMPUTER INC.
System Model	VivoBook_ASUSLaptop K3402ZA_S3402ZA
System Type	x64-based PC
System SKU	
Processor	12th Gen Intel(R) Core(TM) i5-12500H, 2500 Mhz, 12 Core(s), 16 Logical Proc...
BIOS Version/Date	American Megatrends International, LLC. K3402ZA.307, 9/8/2022
SMBIOS Version	3.4
Embedded Controller Version	208.32
BIOS Mode	UEFI
BaseBoard Manufacturer	ASUSTeK COMPUTER INC.
BaseBoard Product	K3402ZA
BaseBoard Version	1.0
Platform Role	Mobile
Secure Boot State	On
PCR7 Configuration	Elevation Required to View
Windows Directory	C:\WINDOWS
System Directory	C:\WINDOWS\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction Layer	Version = "10.0.22621.2506"
User Name	Sebin_Chempotty\sebin
Time Zone	GMT Standard Time
Installed Physical Memory (RAM)	16.0 GB
Total Physical Memory	15.6 GB

Figure 1: Systems specification

3 Software Used

- Jupyter Notebook: For modelling, analysis, and evaluation

4 Download and Install

To do the coding, modeling, and evaluation, using the python language and Jupyter Notebook was used to run the programs for the research. Jupyter Notebook can be accessed with Anaconda Navigator where it do consists of most umbrella applications, such as Pycharm, spyder, etc (Rolon-Mérette, 2016). Below, figure 2 shows the dashboard of the Anaconda Navigator. Jupyter notebooks are known for Python coding platform and it is also one among the flexible application

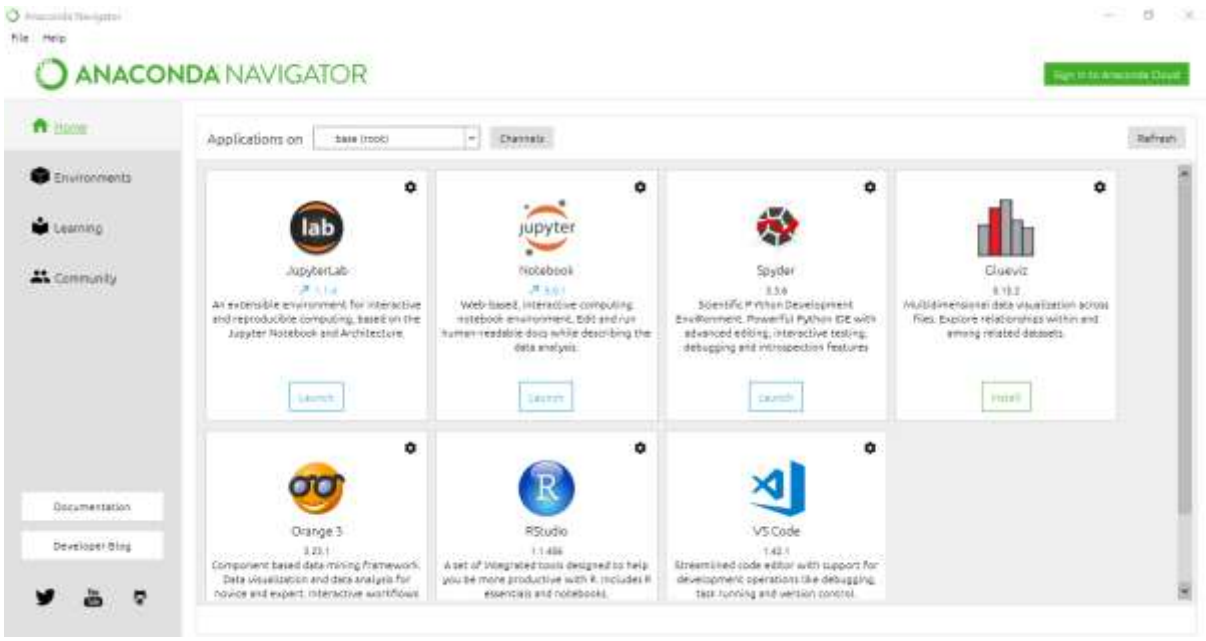

Figure 2

5 Project Development.

Once the installation is complete, open Jupyter Notebook from Anaconda Navigator. Since this is a comprehensive application, it opens with the help of a browser. Google Chrome is the recommended browser for Jupyter Notebook. Once it is open, directories are visible. Create a new folder and a new Python 3 file to open a new notebook.

5.1 Importing libraries

The sample packages that are used in this project are displayed in Figure 3. There are packages that are installed in between the code for running the code. If necessary, additional packages are required to install. Since this is based on the Anaconda Navigator platform, the default packages will be already available and don't require to install it again but should validate again, if any related error occurs.

```
#!/usr/bin/env python
# coding: utf-8

# 1)Importing Libraries

# In[1]:


import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

from keras.models import load_model
from keras.preprocessing import image


import PIL
import cv2

import seaborn as sns #These lines import the Seaborn library, wh
import tensorflow as tf#TensorFlow, a popular deep learning frame
from tensorflow import keras#The keras module from TensorFlow is
                            #which can be used in conjunction wi


# Magic Command

# In[5]:


get_ipython().run_line_magic('matplotlib', 'inline')
#This is a Jupyter Notebook magic command. When you run this code
#it ensures that Matplotlib plots will be displayed directly in t


# 2)Defining File Path Arrays

# In[6]:


import pathlib#provides a convenient way to work with file system
              #manipulate file and directory paths in a platform-
```

References

Rolon-Mérette, D., Ross, M., Rolon-Mérette, T. and Church, K., 2016. Introduction to Anaconda and Python: Installation and setup. *Quant. Methods Psychol*, *16*(5), pp.S3-S11.