National College of Ireland

Configuration Manual

MSc Research Project
MSc in Data Analytics

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School of Computing
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MSc Project Submission Sheet

School of Computing

Student Name:	Pratyush Kumar Pattanayak
Student ID:	X19222343
Programme:	MSc in Data Analytics **Year:** 2022
Module:	Research Project
Lecturer:	Aaloka Anant
Submission Due Date:	26-04-2022
Project Title:	Identification and Classification of Electrical Components on Printed Circuit Boards Using Transfer Learning

Word Count: 481 Page Count: 3

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.
ALL 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: Pratyush Kumar Pattanayak

Date: 26-04-2022

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):	

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Hardware Setup

This project requires substantial amount of hardware resources in order to execute the code.

Minimum Requirement

CPU Memory	**32 GB**
GPU Memory	**16 GB**
Hard drive space	**6 GB**
TensorFlow version	**2.8.0**
Keras Version	**2.7.0**

The code in written in Google Colab notebook and the data is stored in Google Drive since the data has large size.
Following folder structure in Google Drive Home directory needs to be created: -

```
|
|__Research_Project_NCI
    |__Data
    |   |__Interim_Data
    |   |__Raw_Data
    |__Models
```

The zipped dataset is uploaded inside **Raw_Data** folder. The code automatically unzips the zipped dataset and places it inside **Interim_Data** folder under appropriate folder structure.

The code stored in Google Colab and the zipped dataset stored in Google Drive are shared with project supervisor and evaluator. The python notebook containing the entire code is also uploaded in Moodle.

Link to Google Colab: -
https://colab.research.google.com/drive/1KfHvD2E4euPnE1rvg_18EFwpayyQgW4t?usp=sharing

Link to Google drive: -
https://drive.google.com/drive/folders/1m6nD8arCjbob9xg3Okw0Bg0SSG4FWQO8?usp=sharing

The code needs to be executed serially in order to work properly. **Make sure to change run time to GPU and High RAM in settings in Google Colab. Path – Runtime→ Change RunTime.**

The five trained models created are automatically stored under following folder: -
Research_Project_NCI → Models