**Section 1 : Topic Submission Form**

This form should be submitted by the mentioned deadline.

Name: **Vasudevan Sudershan**

Student Number:

Course: **LJMU Masters in Data Science**

**Fill your topic/s below**

**Project Title/Area 1:** Prediction and control of injection moulded part weight using machine learning

**Dataset:**<https://github.com/airtlab/machine-learning-for-quality-prediction-in-plastic-injection-molding/tree/master/dataset>

**Description:** The plastic manufacturing industry is trying to improve the quality by reducing the rejection of plastic scrap and improve the quality. The down time of machines also needs to be reduced, and faster fault analysis to improve efficiency. To improve the quality of the manufacturing industry, perform prediction as a linear regression problem, perform decision tree,

**Project Title/Area 2:** Work from home analysis during pandemic using machine learning algorithm  
  
**Dataset:**<https://www.kaggle.com/datasets/anninasimon/predict-if-people-prefer-wfh-verses-wfo-data>

**Description:** Predict employees’ productivity during pandemic for companies’ growth and success. Random Forest method is used to analyze the prediction model, which would help to improve work from home option in the future. The company with the help of the analyzed results predicts to cut costs and increase the overall turnover.

**Project Title/Area 3:** Personality Prediction using Curriculum Vitae Analysis

**Dataset:**[Personality-Prediction-Through-CV/training\_dataset.csv at master · HiteshAgarwal1/Personality-Prediction-Through-CV · GitHub](https://github.com/HiteshAgarwal1/Personality-Prediction-Through-CV/blob/master/training_dataset.csv)

**Description:** Organizations or companies trying to find out individual personality by doing analysis on their CV. The CV analysis is done by performing the NLP and personality evaluation is done by ML. Logistic regression, Random Forest is performed for personality prediction. The process can be performed by many companies to streamline the recruitment process.

**Fill in this section if a member of staff has agreed to be your supervisor:**

Member of Staff:                                                                                    \_\_\_\_

If you have found a supervisor then you and the member of staff who agreed to supervise your project should sign below.

Vasudevan Sudershan                                                                \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Signature                                                                         Supervisor Signature

01/10/2023                                                                          \_\_\_\_\_\_\_\_\_\_\_\_

Date                                                                                               Date

**Section 2 : Topic Selection Research**

**Table 1 : Topic 1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Link to the Paper** | **Understanding of the Dataset** | **Understanding the Methodology Used** | **Dataset Link** |
| Prediction and control of injection molded part weight using machine learning | <https://www.sciencedirect.com/science/article/pii/S2212827123003761> | "data.csv" includes the parameters of 1451 plastic manufacturing features produced by the company "iGuzzini Illuminazione" . Each row represents the feature vector composed of 13 process parameters of a lens, plus its quality label. | ML methods allow the prediction of part weight and process control. This can increase quality, reduce scrap and costs. Artificial neural networks are often used because they are able to model even complex non-linear relationships. But also relatively simple multiple linear regression models can provide good results. | <https://github.com/airtlab/machine-learning-for-quality-prediction-in-plastic-injection-molding/tree/master/dataset> |
| Quality Prediction in Injection Molding | <https://arxiv.org/ftp/arxiv/papers/1804/1804.04899.pdf> |  |  |  |
| Online Prediction of Molded Part Quality in the Injection Molding Process Using High-Resolution Time Series | <https://www.researchgate.net/publication/368591198_Online_Prediction_of_Molded_Part_Quality_in_the_Injection_Molding_Process_Using_High-Resolution_Time_Series> |  |  |  |
| Analysis of feature extraction algorithms for quality prediction using machine learning in injection molding | <https://www.sciencedirect.com/science/article/pii/S2212827122012136> |  |  |  |
| Comparison of feature selection methods for machine learning based injection molding quality prediction | <https://pubs.aip.org/aip/acp/article/2289/1/020052/597907/Comparison-of-feature-selection-methods-for> |  |  |  |
|  |  |  |  |  |

**Table 2 : Topic 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Link to the Paper** | **Understanding of the Dataset** | **Understanding the Methodology Used** | **Dataset Link** |
| Machine Learning Algorithm for Work from Home Analysis during Epidemic | [(PDF) Machine Learning Algorithm for Work from Home Analysis during Epidemic (2022) [SCOPUS, Grenze] (researchgate.net)](https://www.researchgate.net/publication/366999276_Machine_Learning_Algorithm_for_Work_from_Home_Analysis_during_Epidemic_2022_SCOPUS_Grenze) | “WFH\_WFO\_dataset.csv” includes parameters of rows 206 with options people choosing WFH or WFO | Logistic regression , Random Forest method is used to analyze the prediction model, which would help to improve work from home option in the future. The company with the help of the analyzed results predicts to cut costs and increase the overall turnover. | <https://www.kaggle.com/datasets/anninasimon/predict-if-people-prefer-wfh-verses-wfo-data> |
| Work From Home After Covid-19: Machine Learning-Based Approach to Predict Employee's Choice | [(PDF) Work From Home After Covid-19: Machine Learning-Based Approach to Predict Employee's Choice (researchgate.net)](https://www.researchgate.net/publication/362834320_Work_From_Home_After_Covid-19_Machine_Learning-Based_Approach_to_Predict_Employee's_Choice) |  |  |  |
| Unlocking the COVID-19 Lockdown: Work from Home and Its Impact on Employees | [Unlocking the COVID-19 Lockdown: Work from Home and Its Impact on Employees | Research Square](https://www.researchsquare.com/article/rs-34556/v1) |  |  |  |
| Using Machine Learning to Investigate the Public’s Emotional Responses to Work from Home During the COVID-19 Pandemic | [Using Machine Learning to Investigate the Public’s Emotional Responses to Work from Home During the COVID-19 Pandemic | Request PDF (researchgate.net)](https://www.researchgate.net/publication/349378814_Using_Machine_Learning_to_Investigate_the_Public's_Emotional_Responses_to_Work_from_Home_During_the_COVID-19_Pandemic) |  |  |  |
| Working from Home during the COVID-19 Pandemic: Satisfaction, Challenges and Productivity of Employees | [(PDF) Working from Home during the COVID-19 Pandemic: Satisfaction, Challenges and Productivity of Employees (researchgate.net)](https://www.researchgate.net/publication/346971534_Working_from_Home_during_the_COVID-19_Pandemic_Satisfaction_Challenges_and_Productivity_of_Employees) |  |  |  |
|  |  |  |  |  |

**Table 3 : Topic 3**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Title** | **Link to the Paper** | **Understanding of the Dataset** | **Understanding the Methodology Used** | **Dataset Link** |
| Personality Prediction Via CV Analysis using Machine Learning | <https://www.ijert.org/personality-prediction-via-cv-analysis-using-machine-learning> | "The Big Five." is considered to be an accurate and respected personality scale, which is routinely used by businesses and in psychological research. The Big Five Personality Traits Model measures five key dimensions of people's personalities. | The two methods which train the model and predict the result by giving the various values. train method: It read the dataset for training the model from a csv file and build a model using Logistic Regression. It uses different 7 values for training the model. | <https://www.kaggle.com/code/laowingkin/mbti-study-personality/input> |
| Personality Prediction Through CV Analysis using Machine Learning Algorithms for Automated Recruitment Process | <https://arxiv.org/ftp/arxiv/papers/1804/1804.04899.pdf> |  |  |  |
| PERSONALITY PREDICTION USING SUPERVISED AND UNSUPERVISED ALGORITHMS | [https://www.irjmets.com/uploadedfiles/paper//issue\_8\_august\_2022/29110/final/fin\_irjmets1659778935.pdf](https://www.irjmets.com/uploadedfiles/paper/issue_8_august_2022/29110/final/fin_irjmets1659778935.pdf) |  |  |  |
| A Study on Personality Prediction & Classification Using Data Mining Algorithms | <https://ieeexplore.ieee.org/document/10076743> |  |  |  |
| PERSONALITY PREDICTION SYSTEM USING MACHINE LEARNING | <https://www.jetir.org/papers/JETIR1907N87.pdf> |  |  |  |
|  |  |  |  |  |