Graduation Thesis Project Topics 2024-25

Number	Title	Description	Program
1	Analysis of Supervised Learning for Car Price Prediction	This project aims to develop a predictive model using machine learning algorithms to accurately estimate the market value of cars based on their features, such as make, model, age, mileage, and condition. [Data: kaggle.com/datasets/austinreese/craigslist-carstrucks-data]	ALL
2	Evaluating Supervised Learning Methods for Predicting Gold Prices	This project focuses on using historical gold price data and potentially related economic indicators to train a machine learning model that predicts future gold prices. [Data: kaggle.com/datasets/sid321axn/gold-price-prediction-dataset/data]	ALL
3	Linear Regression-based Insurance Forecast	The goal is to create a machine learning model that can predict the cost of insurance premiums for individuals based on their demographics, health information, and risk factors. [Data: kaggle.com/datasets/mirichoi0218/insurance/data]	ALL
4	Examining Supervised Learning Techniques for Flight Price Prediction	This project involves developing a predictive model that forecasts flight prices by analysing factors such as travel dates, destinations, airlines, and demand trends. [Data: kaggle.com/datasets/shubhambathwal/flight-price-prediction]	ALL
5	Automated Image Categorization of CIFAR-10 Dataset	This project focuses on developing a machine learning model to automatically categorize images from the CIFAR-10 dataset into 10 predefined classes, using Convolutional Neural Networks (CNNs) for high-accuracy classification. [Data: cs.toronto.edu/~kriz/cifar.html]	ALL
6	Automated Image Categorization of CIFAR-100 Dataset	This project focuses on developing a machine learning model to automatically categorize images from the CIFAR-100 dataset into 100 predefined classes, using CNN for high-accuracy classification. [Data: cs.toronto.edu/~kriz/cifar.html]	ALL
7	Classifying Cats vs. Dogs Using CNN	The goal of this project is to build a machine learning model, typically a Convolutional Neural Network (CNN), that can accurately classify images as either containing a cat or a dog. [Source: kaggle.com/code/fareselmenshawii/cats-vs-dogs-classification/notebook]	ALL
8	Dog Breed Classification using CNN	This projects develops machine learning models to accurately identify and classify different dog breeds. [Data: kaggle.com/datasets/mohamedchahed/dog-breeds]	ALL
9	Analysing Fashion MNIST dataset using Unsupervised Machine Learning Approaches	The project goal is to use unsupervised machine learning approaches (i.e., clustering and/or data projection) to get the inherent groupings of similar objects from the Fashion MNIST dataset. [Source: kaggle.com/datasets/zalando-research/fashionmnist/code].	ALL
10	Machine Learning Based Predictive Analysis of Fashion MNIST dataset	The project goal is to train machine learning model uisng image based dataset (i.e., the Fashion MNIST dataset - dataset is publicly available) to classify dresses into categories such as trouser, coat, shirt etc.. [Source: kaggle.com/datasets/zalando-research/fashionmnist/code].	ALL

11	SVHN Classification with CNN	SVHN (Street View House Numbers): Contains real-world color images of house numbers collected from Google Street View images. The task is to recognize the digits in the images. [Source: kaggle.com/code/dimitriosroussis/svhn-classification-with-cnn-keras-96-acc/notebook]	ALL
12	Supervised Learning for Strawberry Ripeness Classification	This is a precision agriculture project that leverages labelled image data to train a model capable of distinguishing between ripe and unripe strawberries, optimizing the harvesting process with high accuracy and efficiency. [Data: kaggle.com/datasets/abdulbasit31/strawberry-dataset]	ALL
13	Clustering-Based Feature Discovery for Strawberry Ripeness Detection	This project employs unsupervised clustering to discern patterns in strawberry images, such as colour gradations and size variations, to unearth key features for ripeness classification, aiming for precise differentiation between ripe and unripe strawberries. [Data: kaggle.com/datasets/abdulbasit31/strawberry-dataset]	ALL
14	Unsupervised Machine Learning Based Analysis of Apple Quality	The aim of the project is to train a machine learning classification model using descriptors such as size of the fruit, weight of the fruit, sweetness of the fruit, texture indicating crunchiness of the fruit etc., to predict quality of fruit in terms of good or bad. [Source: kaggle.com/datasets/nelgiriyewithana/apple-quality].	ALL
15	Orange Quality Rating Prediction	This project employs supervised learning techniques to analyse characteristics of oranges, such as size, colour, and texture. Utilizing a variety of algorithms, the goal is to accurately predict quality ratings, enabling stakeholders in the agricultural and retail sectors to assess and classify orange quality effectively, thereby optimizing the supply chain and ensuring consumer satisfaction. [Data: kaggle.com/code/yossefmohammed/orange-quality-rating-prediction/notebook]	ALL
16	Tomato Leaf Detection by transfer learning	Using transfer learning, this project develops a model to detect and classify diseases in tomato leaves, aiming to aid early diagnosis and reduce crop loss for farmers. Source: kaggle.com/code/adinishad/tomato-leaf-detection-by-transfer-learning/input	CS/AI
17	Anomaly detection of fraudulent financial transactions.	This project aims to develop a predictive model using machine learning algorithms to accurately identify fraudulent financial transactions based on features such as purchase time, value, source, and ID. [Data: github.com/amazon-science/fraud-dataset-benchmark]	ALL
18	Predictive Analytics of Credit Card Applications	The project will use retrospective data of credit card applications to train a predictive model for classifying credit card applications. [Data: archive.ics.uci.edu/dataset/27/credit+approval]	ALL
19	Supervised Learning for Intrusion Detection System	This project aims to develop a robust Intrusion Detection System (IDS) using supervised learning algorithms, including Random Forest and Support Vector Machine (SVM). It focuses on analysing network traffic data to accurately identify and classify potential cyber threats, enhancing security measures. [Source: kaggle.com/code/abhaymudgal/intrusion-detection-system/notebook]	AI/CS

20	ANN-based Intrusion Detection System	This project leverages Artificial Neural Networks (ANN) to create an advanced Intrusion Detection System (IDS) capable of analysing and identifying cyber threats within network traffic with high accuracy, ensuring enhanced cybersecurity posture. [Source: kaggle.com/code/abhaymudgal/intrusion-detection-system/notebook]	AI/CS
21	Breast Cancer Survival Analysis Assessing Gene Expression Impact	This project analyses the impact of specific gene expressions on survival rates among breast cancer patients to identify potential prognostic biomarkers. [Data/Source: https://kmplot.com/analysis/]	AI/CS
22	Ovarian Cancer Prognostics Gene Expression Profiles and Patient Outcomes	This study focuses on ovarian cancer, correlating gene expression profiles with survival outcomes to enhance prognostic accuracy. [Data/Source: https://kmplot.com/analysis/]	AI/CS
23	Gene Expression and Survival Analysis of Lung Cancer Patients	This research project determines how different gene expressions influence survival probabilities in lung cancer patients, aiming to improve treatment strategies. [Data/Source: https://kmplot.com/analysis/]	AI/CS
24	Gastric Cancer Biomarker Validation via Survival Analysis	Leveraging survival data analysis, this project validates the relevance of biomarkers in gastric cancer, contributing to targeted therapy developments.	AI/CS
25	Analysis of Prognostic Value of Gene Expression in Colon Cancer	This project investigates the prognostic value of gene expression levels in colon cancer, potentially leading to more personalized treatment plans. [Data/Source: https://kmplot.com/analysis/]	AI/CS
26	Prognostic Insights into the CALD1 Gene	The project investigates the CALD1 gene's role and its prognostic value in various diseases, aiming to understand how its expression correlates with disease outcomes. [Source: https://doi.org/10.1201/9781003251903-8/]	AI/CS
27	Deciphering PROM1/PROM2 gene's Prognostic Significance	This study aims to analyse the prognostic significance of PROM1 and PROM2 genes in certain diseases, potentially leading to new insights into their roles in disease progression and patient outcomes. [Source: https://www.nature.com/articles/s41417-019-0109-7]	AI/CS
28	Analysing Proteomics Dataset using Machine Learning Based Data Clustering Approaches	This project aims to use Human Leukocyte Antigen (HLA) sequence dataset and apply unsupervised machine learning approaches (such as K-means, Gaussian Mixture Model (GMM)) to get any inherent clusters and/or subclusters within a set of alleles of HLA. The processing of the data will also involve understanding sequence alignment and preparing data ready for use by machine learning models. [Data: https://github.com/ANHIG/IMGTHLA/tree/Latest]	AI/CS
29	Analysing Proteomics Dataset using Machine Learning Based Data Projection Techniques	This project aims to use Human Leukocyte Antigen (HLA) sequence dataset and visually observe a group of alleles of HLA Protein Sequences by projecting high-dimensional sequence descriptors to a low-dimensional (2-D) space using techniques such as Principal Component Analysis (PCA), t-Stochastics Neighbourhood Embedding (t-SNE). The processing of the data will also involve understanding sequence alignment and preparing data ready for use by machine learning models. [Data: https://github.com/ANHIG/IMGTHLA/tree/Latest]	AI/CS

30	Predictive Analytics of Cervical Cancer Patients	The project will use retrospective data of cervical cancer patients risk factors to train a machine learning and then use this trained model to enable predictions for patients with/without cervical cancer. [Data: https://archive.ics.uci.edu/dataset/383/cervical+cancer+risk+factors]	AI/CS
31	Image Super Resolution using Autoencoders	This project uses autoencoders, a type of neural network, to increase the resolution of low-resolution images by learning to generate high-resolution versions, enabling applications like enhancing image quality in various domains such as photography, medical imaging, and satellite imagery. [Source: kaggle.com/code/quadeer15sh/image-super-resolution-using-autoencoders]	AI/CS
32	MRI image denoising by traditional computer vision.	This project aims to improve the quality of MRI scans using traditional computer vision techniques such as filtering to facilitate better diagnosis and treatment planning for patients. [Data: https://brain-development.org/ixi-dataset/]	AI/CS
33	MRI image denoising by machine and deep learning.	This project aims to improve the quality of MRI scans using deep learning-based computer vision techniques such as CNNs to facilitate better diagnosis and treatment planning for patients. [Data: https://brain-development.org/ixi-dataset/]	AI/CS
34	MRI image denoising by hybrid deep learning and filtering methods.	This project aims to improve the quality of MRI scans using a hybrid approach of traditional computer vision techniques such as filtering and deep learning methods to facilitate better diagnosis and treatment planning for patients. [Data: https://brain-development.org/ixi-dataset/]	AI/CS
35	Diabetes Prediction using Classifier Algorithms	This project is about using machine learning techniques, likely classification algorithms, to predict the occurrence or classification of diabetes based on certain input features or variables. [Data: kaggle.com/code/adilashrafi/diabetes-prediction-accuracy-99].	AI/CS
36	Machine-learning-based Heart Disease Risk Factors Analysis	This project analyses heart disease dataset to uncover insights into the distribution, correlations, and patterns within the data. The aim is to gain a deeper understanding of the dataset's characteristics, which can inform the development of predictive models and aid in identifying risk factors for heart disease. [Data: kaggle.com/code/georgyzubkov/heart-disease-exploratory-data-analysis/notebook]	AI/CS
37	Exploratory Data Analysis (EDA) on Diabetes Data Set	Exploratory Data Analysis (EDA) on the Diabetes dataset involves analysing and visualizing various attributes to gain insights into the data distribution, relationships between features, and potential patterns. [Data: kaggle.com/code/imtkaggleteam/diabetes-analysis/notebook]	AI/CS
38	Analysis of Diabetic retinopathy using SHAP Explainability	This project analyzes diabetic retinopathy using SHAP explainability, aiming to understand the influence of various features on the condition's severity. [Data: kaggle.com/code/dimitreoliveira/diabetic-retinopathy-shap-model-explainability/notebook]	AI/CS

39	Detect Retina Damage from OCT Images	This project aims to detect retina damage from Optical Coherence Tomography (OCT) images using machine learning or deep learning techniques. [Source: https://www.kaggle.com/code/paultimothymooney/detect-retina-damage-from-oct-images/notebook]	AI/CS
40	Retinal Vessel Segmentation using deep learning	This project employs deep learning techniques to segment retinal blood vessels from images, aiding in medical diagnosis and analysis of various retinal diseases. [Source: https://www.kaggle.com/code/ipythonx/retinal-vessel-segmentation-starter/notebook]	AI/CS
41	Segmenting northern European glaciers from satellite imagery by supervised learning.	Monitoring the melting of northern-European fresh-water glaciers is essential in understand the effects of global warming. This project aims to segment glaciers from satellite imagery by supervised machine learning methods. [Data: https://github.com/Aryal007/glacier_mapping]	AI/CS
42	Segmenting northern-European glaciers from satellite imagery through self-supervised learning and few-shot transfer learning.	This project aims to segment glaciers from satellite imagery by machine learning methods with only a small number of human-annotated labels. Monitoring the melting of northern-European fresh-water glaciers is essential in understand the effects of global warming. [Data: https://github.com/Aryal007/glacier_mapping]	AI/CS
43	Classifying crop disease by machine learning.	During this project you will design and develop machine learning methods for computer vision to detect the presence of disease in agricultural crops and further classify them into distinct disease categories. [Data: https://github.com/pratikkayal/PlantDoc-Dataset]	AI/CS
44	Identifying disease regions of crops from images by machine learning.	During this project you will design and develop machine learning methods for computer vision to identify regions of disease in crop images to appropriately detect treatment areas. [Data: https://github.com/pratikkayal/PlantDoc-Dataset]	AI/CS
45	Analysing unsupervised/self-supervised learning methods for plant classification.	During this project you will explore explainable AI methods such as GradCAM and SHAP (SHapley Additive exPlanations) to provide insights into the factors influencing a plant to be classified as diseased to improve identification and treatment decision making. [Data: https://github.com/pratikkayal/PlantDoc-Dataset]	AI/CS
46	Machine learning-based crop yield prediction.	This project aims to develop a predictive model using machine learning algorithms to accurately predict the yield of crops based on features such as crop type, weather conditions, and land conditions. [Data: kaggle.com/datasets/jiteshmd/crop-prediction-data]	ALL
47	Dashboard for Epidemiological Analysis for MIMICS III/IV Dataset	This project aims to develop a dashboard to get epidemiological information (such as groupings based on age, gender, most frequent prescriptions, etc.) for a selected disease/condition from the MIMICS III/IV dataset. [Source: https://www.nature.com/articles/s41597-022-01899-x]	ALL
48	Data visualisation dashboard for agricultural land management.	This project is to design and develop a data visualisation application for farmers to manage their land and resources. This application will provide valuable insights for farmers to understand their resource and assets. [Data: kaggle.com/datasets/srinivas1/agricuture-crops-production-in-india/data]	ALL

49	Predicting Sleep Efficiency: EDA and Machine Learning Approach	This project analyses a sleep efficiency dataset by first cleaning and exploring the data. It uses visualizations to understand variable relationships, and feature engineering to enhance predictive power. Various machine learning models are then trained and evaluated to predict sleep efficiency. [Data: kaggle.com/code/melikedilekci/sleep-efficiency-dataset]	ALL
50	Predicting Alzheimer's Disease from MRI Data	This project uses MRI data to predict Alzheimer's disease. It involves data loading, cleaning, and preprocessing, followed by exploratory data analysis with visualizations. The project then builds and evaluates machine learning models to predict Alzheimer's disease. [Data: kaggle.com/code/shreyaspj/alzheimer-s-analysis-using-mri]	AI/CS
51	Real-time Sensor Data Aggregation	This project develops an application to perform rolling aggregations of temperature readings from multiple sensors. It processes high-frequency temperature data, aggregates it, and outputs it at a lower time resolution. [Data: github.com/quixio/template-windowing-reduce]	AI/CS
52	News sentiment analysis for sarcasm detection	Identification of sentiment in a news collection publicly available in Kaggle with focus on detecting sarcasm using deep learning methods.	ALL
53	Global news sentiment analysis	Identification of sentiment in a publicly available Kaggle global news collection using deep learning methods.	ALL
54	Financial news sentiment analysis	Identification of sentiment in a publicly available Kaggle financial news collection using deep learning methods.	ALL
55	AG news sentiment analysis	Identification of sentiment in the Kaggle AG news sentiment classification dataset using deep learning methods.	ALL
56	Space news sentiment analysis	Identification of sentiment in the publicly available Kaggle space news collection using deep learning methods.	ALL
57	Sentiment analysis of Amazon product reviews	Identification of sentiment in the publicly available Kaggle Amazon product reviews dataset using deep learning methods.	ALL
58	Sentiment analysis of Flipkart product reviews	Identification of sentiment in the publicly available Kaggle Flipkart product reviews dataset using deep learning methods.	ALL
60	Sentiment analysis of women's e-commerce clothing product reviews	Identification of sentiment in the publicly available Kaggle women's e-commerce clothing product reviews dataset using deep learning methods.	ALL
61	Sentiment analysis of fine food product reviews	Identification of sentiment in the publicly available Kaggle fine food product reviews dataset using deep learning methods.	ALL
62	Automatic summarisation of TripAdvisor reviews of London restaurants	The social platform TripAdvisor links users to restaurants by means of reviews posted by them. Using the information of these interactions, we can get valuable insights text summarisation. Dataset available at https://www.kaggle.com/datasets/inigolopezrioboo/a-tripadvisor-dataset-for-nlp-tasks?select=Paris_reviews.csv	ALL

63	Automatic summarisation of TripAdvisor reviews of New York restaurants	The social platform TripAdvisor links users to restaurants by means of reviews posted by them. Using the information of these interactions, we can get valuable insights text summarisation. Dataset available at https://www.kaggle.com/datasets/inigolopezrioboo/a-tripadvisor-dataset-for-nlp-tasks?select=Paris_reviews.csv	ALL
64	Automatic summarisation of TripAdvisor reviews of Paris restaurants	The social platform TripAdvisor links users to restaurants by means of reviews posted by them. Using the information of these interactions, we can get valuable insights text summarisation. Dataset available at https://www.kaggle.com/datasets/inigolopezrioboo/a-tripadvisor-dataset-for-nlp-tasks?select=Paris_reviews.csv	ALL
65	Automatic summarisation of TripAdvisor reviews of Spanish (Barcelona) restaurants	The social platform TripAdvisor links users to restaurants by means of reviews posted by them. Using the information of these interactions, we can get valuable insights text summarisation. Dataset available at https://www.kaggle.com/datasets/inigolopezrioboo/a-tripadvisor-dataset-for-nlp-tasks?select=Paris_reviews.csv	ALL
66	Automatic summarisation of TripAdvisor reviews of Spanish (Madrid) restaurants	The social platform TripAdvisor links users to restaurants by means of reviews posted by them. Using the information of these interactions, we can get valuable insights text summarisation. Dataset available at https://www.kaggle.com/datasets/inigolopezrioboo/a-tripadvisor-dataset-for-nlp-tasks?select=Paris_reviews.csv	ALL
67	A web crawler to look for dead links in the University of Aberdeen's website	Develop a web crawler to automatically check for dead links in the University of Aberdeen website	ALL
68	A web crawler to look for dead links in the SCNU's website	Develop a web crawler to automatically check for dead links in the SCNU website	ALL
69	A web crawler to create a sitemap for the University of Aberdeen's website	Develop a web crawler to automatically create a sitemap for University of Aberdeen website	ALL
70	A web crawler to create a sitemap for the SCNU's website	Develop a web crawler to automatically create a sitemap for SCNU website	ALL
71	Emotion recognition using transfer learning on TripAdvisor reviews of London restaurants	This project uses a publicly available GitHub dataset to train an emotion classifier. The classifier can be used to experiment with new datasets or add more emotions to the classification.	AI
72	Emotion recognition using transfer learning on TripAdvisor reviews of New York restaurants	This project uses a publicly available GitHub dataset to train an emotion classifier. The classifier can be used to experiment with new datasets or add more emotions to the classification.	AI
73	Emotion recognition using transfer learning on TripAdvisor reviews of Paris restaurants	This project uses a publicly available GitHub dataset to train an emotion classifier. The classifier can be used to experiment with new datasets or add more emotions to the classification.	AI

74	Emotion recognition using transfer learning on TripAdvisor reviews of Madrid restaurants	This project uses a publicly available GitHub dataset to train an emotion classifier. The classifier can be used to experiment with new datasets or add more emotions to the classification.	AI
75	Emotion recognition using transfer learning on TripAdvisor reviews of Barcelona restaurants	This project uses a publicly available GitHub dataset to train an emotion classifier. The classifier can be used to experiment with new datasets or add more emotions to the classification.	AI
76	Automatic keyword extraction from the Harvard University Ratings and Reviews	Utilize the publicly available rich review texts for keyword extraction using deep learning methods	ALL
77	Automatic summarisation of reviews from the Harvard University Ratings and Reviews	Utilize the publicly available rich review texts for testing summarisation methods based on deep learning	ALL
78	Sentiment analysis of the Harvard University Ratings and Reviews	Understand the sentiment behind the textual reviews, distinguishing between academic and traveller feedback.	ALL
79	Emotion analysis of the Harvard University Ratings and Reviews	Understand the emotional tone behind the textual reviews, distinguishing between academic and traveler feedback.	ALL
80	Automatic keyword extraction from Yelp reviews	Utilize a Yelp reviews dataset that focuses on Domino's franchises in the US to test summarisation algorithms. Kaggle Dataset: https://www.kaggle.com/datasets/srees1988/user-reviews-for-nlp	ALL
81	Automatic summarisation of Yelp reviews	Utilize a Yelp reviews dataset that focuses on Domino's franchises in the US to test automatic keyword extraction algorithms. Kaggle Dataset: https://www.kaggle.com/datasets/srees1988/user-reviews-for-nlp	ALL
82	Sentiment analysis of Yelp reviews	Identify the sentiment behind Yelp reviews that focus on Domino's franchises in the US. Kaggle Dataset: https://www.kaggle.com/datasets/srees1988/user-reviews-for-nlp	ALL
83	Emotion analysis of Yelp reviews	Identify the emotional tone behind Yelp reviews that focus on Domino's franchises in the US. Kaggle Dataset: https://www.kaggle.com/datasets/srees1988/user-reviews-for-nlp	ALL
84	Document Classification of Academic Papers	Test clustering algorithms capable of categorizing academic papers into relevant research domains or topics. Dataset available at https://www.kaggle.com/datasets/arplusman/papers-by-subject	ALL
85	Automatic Indexing of Academic Papers	Test keyword extraction algorithms to identify themes present within the academic papers. Dataset available at https://www.kaggle.com/datasets/arplusman/papers-by-subject	ALL

86	Automatic keyword extraction from Medium articles	Utilize the text of data science Medium articles for keyword extraction. Dataset available at https://www.kaggle.com/datasets/meruvulikith/1300-towards-datascience-medium-articles-dataset	ALL
87	Automatic summarisation of Medium articles	Utilize the text of data science Medium articles to test summarisation algorithms. Dataset available at https://www.kaggle.com/datasets/meruvulikith/1300-towards-datascience-medium-articles-dataset	ALL
88	Emotion analysis of Medium articles	Understand the emotional tone behind data science Medium articles. Dataset available at https://www.kaggle.com/datasets/meruvulikith/1300-towards-datascience-medium-articles-dataset	ALL
89	Dialogue system to choose a master's course	A conversational agent intended to communicate with a human concerning MSc course selection	ALL
90	Dialogue system to select postgraduate courses	A conversational agent intended to communicate with a human concerning postgraduate course selection.	ALL
91	Comparison and analysis of review recommendation algorithms (collaborate filtering vs influence scoring)	Support business decision making by means of analysing and comparing two different recommendation algorithms in the context of social media. The dataset is publicly available and provided by the Max-Planck Institute.	AI
92	Comparison and analysis of review recommendation algorithms (collaborate filtering vs content-based filtering)	Support business decision making by means of analysing and comparing two different recommendation algorithms in the context of social media. The dataset is publicly available and provided by the Max-Planck Institute.	ALL
93	The use of large language models for decision making	Fine-tuning large language models to assist in decision making on advertisement and shopping behaviour	ALL
94	Question Answering Tasks involving publicly available datasets	Use of public datasets specifically created for question answering tasks and (for example, SquAD from Stanford).	ALL
95	The use of large language models for prediction	Use large language models for prediction of stock market, sales market, etc., using publicly available datasets.	ALL
96	Size optimization for machine learning models	The project aims to reduce the size of machine learning models to let them fit for resource-constrained devices, e.g. edge and AIoT platforms.	AI
97	Real estate advertisement system	Develop an advertisement platform that allows users to post and get real estate information in time	ALL
98	Book recommendation system	In this project, an online (or offline) platform will be developed to provide users with recommendations for books, based input from the users of the system. The platform allows users to rate different books and stores the ratings in a database, and then users can search for personally recommended books based on their ratings and the ratings by other users.	ALL

99	Hotel recommendation system	In this project, an online (or offline) platform will be developed to provide users with recommendations for hotels, based input from the users of the system. The platform allows users to rate different hotels and guesthouses and stores the ratings in a database, and the users can search for personally recommended hotels based on their ratings and the ratings by other users.	ALL
100	Movie recommendation system	In this project, an online (or offline) platform will be developed to provide users with recommendations for movies, based input from the users of the system. The platform allows users to rate different movies and stores the ratings in a database, and the users can search for personally recommended movies based on their ratings and the ratings by other users.	ALL
101	Music recommendation system	In this project, an online (or offline) platform will be developed to provide users with recommendations for songs or artists, based input from the users of the system. The platform allows users to rate different songs or artists and stores the ratings in a database, and then users can search for personally recommended songs or artists based on their ratings and the ratings by other users.	ALL
102	Restaurant recommendation system	In this project, an online (or offline) platform will be developed to provide users with recommendations for restaurants, based input from the users of the system. The platform allows users to rate different restaurants and stores the ratings in a database, and then users can search for personally recommended restaurants based on their ratings and the ratings by other users.	ALL
103	Tourist attraction recommendation system	In this project, an online (or offline) platform will be developed to provide users with recommendations for tourist attractions, based input from the users of the system. The platform allows users to rate different attractions and stores the ratings in a database, and then users can search for personally recommended restaurants based on their ratings and the ratings by other users.	ALL
104	Hotel booking system	In this project, a database application and an online (or offline) user interface will be developed for managing hotel reservations. The user interface will allow users with different privileges to search and reserve hotel rooms for specific periods of time. The application should support hotel rooms with different sizes.	BMIS
105	Library management system	In this project, a database application and an online (or offline) user interface will be developed for managing the books in a library. The user interface will allow users with different privileges to search, add, reserve, loan, return, and remove books from the collection. The application should also keep track on the location of the books in the library.	BMIS
106	Restaurant booking system	In this project, a database application and an online (or offline) user interface will be developed for managing restaurant bookings. The user interface will allow users with different privileges to search and reserve seats in the restaurant at specific times. The application should support tables with different number of seats.	BMIS

107	Student accommodation management system	In this project, a database application and an online (or offline) user interface will be developed for managing student dormitory accommodation. The user interface will allow users with different privileges to search and reserve accommodation for specific periods of time. The application should support dormitories with different number of beds.	BMIS
108	Supermarket stock management system	In this project, a database application and a user interface will be developed for managing the supermarket stock. The user interface will allow users with different privileges to search, add, reserve, remove items from the stock. The application should also keep track on the expiration dates of the food items to notify them to be discarded on time.	BMIS
109	Warehouse stock management system	In this project, a database application and a user interface will be developed for managing the warehouse stock. The user interface will allow users with different privileges to search, add, reserve, remove items from the stock. The application should also keep track on the location of the items in the warehouse.	BMIS
110	Badminton tournament scheduling	In this project, an application is created for automated scheduling of a badminton tournament, given specific constraints, such as game format (round robin/cup system), availability of courts, etc. The program should aim to schedule matches so that fairness criteria will be fulfilled as accurately as possible (e.g., all the players have in average the same time to rest between the games etc.)	CS
111	Football league scheduling	In this project, an application is created for automated scheduling of a football league, given specific constraints, such as game format, available dates for teams, etc. The program should aim to schedule matches so that fairness criteria will be fulfilled as accurately as possible (e.g., all the teams have in average the same time to rest between the matches etc.)	CS
112	Locomotive scheduling	In this project, an application is created for automated scheduling of locomotives to work on specific trains, given specific constraints, such as number of cars and locomotive capacity, route, etc.	CS
113	Nursing staff shift scheduling	In this project, an application is created for automated scheduling of work shifts, given specific constraints, such as personal preferences of the nursing staff members, required staff at different times according to their specialisations, etc. The program should aim to schedule courses so that fairness criteria will be fulfilled as accurately as possible (e.g., all the staff has enough time to rest between shifts, personal preferences followed as much as possible, etc.)	CS
114	Restaurant staff shift scheduling	In this project, an application is created for automated scheduling of work shifts in a restaurant, given specific constraints, such as personal preferences of the staff members, required number of staff at specific times, etc. The program should aim to schedule courses so that fairness criteria will be fulfilled as accurately as possible (e.g., all the staff has enough time to rest between shifts, personal preferences followed as much as possible, etc.)	CS

115	University course scheduling	In this project, an application is created for automated scheduling of university classes, given specific constraints, such as classroom availability, classroom size, class size, teacher availability etc. The program should aim to schedule courses so that fairness criteria will be fulfilled as accurately as possible (e.g., teacher and student workload is not too heavily focused on same days, etc.)	CS
116	Automated consumer demand forecasting	In this project, time series models will be used for automated forecasting of consumer demand. The models will be trained and tested on public datasets.	AI
117	Automated churning rate forecasting	In this project, time series models will be used for automated forecasting of churning rates. The models will be trained and tested on public datasets.	AI
118	Automated house price forecasting	In this project, time series models will be used for automated forecasting of house prices. The models will be trained and tested on public datasets.	AI
119	Automated sports team performance forecasting	In this project, time series models will be used for automated forecasting of the performance of sports teams. The models will be trained and tested on publicly available information of the performance of real teams.	AI
120	Automated stock price forecasting	In this project, time series models will be used for automated forecasting of stock prices. The models will be trained and tested on public datasets.	AI
121	Automated traffic forecasting	In this project, time series models will be used for automated forecasting of traffic intensity on a specific route at specific time, to assist driver in route planning and to optimise fuel consumption. The models will be trained and tested on public datasets.	AI
122	Automated weather forecasting	In this project, time series models will be used for automated forecasting of weather (e.g., temperature or humidity). The models will be trained and tested on public datasets.	AI
123	Predictive Maintenance System	In this project, design a predictive maintenance system for IT infrastructure, using machine learning algorithms to analyze system logs, performance metrics, and hardware sensor data to anticipate potential failures and proactively schedule maintenance tasks.	AI
124	Airline ticket reservation chatbot	In this project, an online platform is implemented with a chatbot for assisting the user to book airline tickets, cancel or change bookings, etc.	ALL
125	Banking services chatbot	In this project, an online platform is implemented with a chatbot for assisting the user in banking services.	ALL
126	Hotel reservation chatbot	In this project, an online platform is implemented with a chatbot for assisting the user to reserve hotel rooms, cancel bookings, etc.	ALL
127	Human resources chatbot	In this project, an online platform is implemented with a chatbot for assisting the user with different kinds of HR-related tasks and interactions.	ALL
128	Internet shop chatbot	In this project, an online platform is implemented with a chatbot for assisting the user to order products from an internet shop, ask for information about the products, etc.	ALL
129	Movie theatre chatbot	In this project, an online platform is implemented with a chatbot for assisting the user to buy movie tickets, ask questions about the movies in the theatre, etc.	ALL

130	Restaurant reservation chatbot	In this project, an online platform is implemented with a chatbot for assisting the user to book a table in a restaurant, cancel a booking, ask questions about the menu, etc.	ALL
131	Assistant for finding a parking lot	In this project, an online (or offline) platform is developed for assisting the user to find a free parking lot in a simulated traffic environment. The system should use information about the distance to different parking areas, their occupancy rate, and predicted occupancy rate at the time of expected arrival.	CS
132	Elevator optimisation	In this project, a program is developed to optimise a group of elevators in a skyscraper so that the total waiting time is minimised. The program should be tested with different configurations in a simulated traffic environment, and the program should consider fairness criteria so that all the users will be served within a reasonable time.	CS
133	Marine traffic optimisation	In this project, an online (or offline) platform is developed for assisting the user to predict and optimise marine traffic. Public datasets will be used for simulating marine traffic.	CS
134	Route finder assistant for flights	In this project, an online (or offline) platform is developed for assisting the user to find the optimal flight connections from the the origin to the destination airport. The flight connections can be modeled as a graph, and it can be based on a real flight network system or an imaginary one.	CS
135	Route finder assistant for subway	In this project, an online (or offline) platform is developed for assisting the user to find the optimal (fastest) route from the the origin to the destination station in a subway system. The subway system is modelled as a graph, and it can be based on a real subway system or an imaginary one.	CS
136	Route finder assistant for trains and buses	In this project, an online (or offline) platform is developed for assisting the user to find the optimal route from the origin to the destination station in a network containing train and bus lines. The user can search for the optimal route using different criteria, such as the fastest or the cheapest route. The system can be modelled as a graph, based on real or imaginary railway and bus connections.	CS
137	Traffic light optimisation	In this project, a program is developed to optimise the traffic light cycles so that the total travel time is optimised. The program should be tested with different configurations in a simulated traffic environment, and the program should consider fairness criteria so that all the cars will reach their destination within a reasonable time.	CS
138	Fleet route management and optimisation	In this project, design a platform that optimizes the routing and scheduling of vehicles for transportation or delivery services, considering factors such as traffic conditions, vehicle capacities, and delivery deadlines.	CS
139	Workforce Scheduling and Optimization	In this project, design a tool that automates workforce scheduling based on factors such as employee availability, skillsets, and workload requirements, optimizing shift assignments to meet business needs while minimizing overtime and staffing gaps.	CS

140	Energy Consumption Monitoring and Optimization	In this project, build a system that monitors energy consumption in commercial buildings and identifies opportunities for optimization, such as adjusting HVAC settings or scheduling energy-intensive tasks during off-peak hours.	CS
141	Automatic email classification	In this project, a program is developed to automatically classify business emails into predefined categories (spam, customer complaints, customer queries, etc). Optionally, the program can also generate written justifications for the classification.	ALL
142	Automatic fake news prediction	In this project, a program is developed to automatically detect fake news, based on public datasets.	ALL
143	Automatic supermarket stock summarisation	In this project, a program is developed to generate a written summary of supermarket stock activity to the program in a specific format. The summary should support the staff in stock management, and e.g., give an idea of which items are consumed faster or slower than expected, and which products are in risk of expiring.	ALL
144	Automatic warehouse stock summarisation	In this project, a program is developed to generate a written summary of warehouse stock activity to the program in a specific format. The summary should support the staff in stock management, and e.g., give an idea of which items are consumed faster or slower than expected.	ALL
145	Customer feedback summarisation	In this project, a program is developed to generate a written summary of customer feedback submitted to the program in a specific format. The feedback can contain categorical ratings (e.g., using scale from very satisfied to very unsatisfied), as well as open comments.	ALL
146	Customer sentiment analysis	In this project, a program is developed to generate a written summary of customer sentiment analysis. The analysis uses public datasets.	ALL
147	Product demand analysis	In this project, a program is developed to generate a written summary of recent product demand to the program in a specific format. The summary should support the staff in summarising which products are high and low in demand, and what are the trends in demand.	ALL
148	Segmented product demand analysis	In this project, a program is developed to generate a written summary of recent product demand within different customer segments, based on the data on demand and the demographics of the customers. The summary should support the staff to find out which products are high and low in demand in different customer segments.	ALL
149	Game bot for Captain's Mistress	In this project, a program is developed to play against a human opponent (or another algorithm) in the game of Captain's Mistress (https://www.mastersofgames.com/rules/captains-mistress-rules.htm). The bot can be based on hand-written rules or machine learning.	AI
150	Game bot for Checkers	In this project, a program is developed to play against a human opponent (or another algorithm) in the famous game of Checkers (https://www.mastersofgames.com/rules/draughts-rules.htm). The bot can be based on hand-written rules or machine learning.	AI

151	Game bot for Chinese Checkers	In this project, a program is developed to play against a human opponent (or another algorithm) in Chinese Checkers (https://www.mastersofgames.com/rules/chinese-checkers-rules.htm). The bot can be based on hand-written rules or machine learning, and it is enough to support the two-player version of the game.	AI
152	Game bot for Hnefatafl	In this project, a program is developed to play against a human opponent (or another algorithm) in the ancient game of Hnefatafl (http://aagenielsen.dk/simple_hnefatafl_rules.php). The bot can be based on hand-written rules or machine learning.	AI
153	Game bot for Fangqi	In this project, a program is developed to play against a human opponent (or another algorithm) in Fangqi (https://boardgamegeek.com/boardgame/42225/fangqi). The bot can be based on hand-written rules or machine learning.	AI
154	Game bot for Nine Men's Morris	In this project, a program is developed to play against a human opponent (or another algorithm) in Nine Men's Morris (https://www.mastersofgames.com/rules/morris-rules.htm). The bot can be based on hand-written rules or machine learning.	AI
155	Game bot for Tic-Tac-Toe	In this project, a program is developed to play against a human opponent (or another algorithm) in the famous game of Tic-Tac-Toe (https://toytheater.com/tic-tac-toe/). The bot can be based on hand-written rules or machine learning, and it should support different variants of the game (e.g., the winner must get five noughts or crosses next to each other to win the game).	AI
156	Dynamic pricing for customised car features	In this project, a computer program with two parts are developed for simulating consumer behaviour, and dynamically adjusting the prices of different customised features (colour, transmission type, etc.) of cars to maximise profits. The program should take into consideration the customers' willingness to pay for the customisations, as well as the price of implementing them. The program should be tested with different consumer behaviour configurations.	BMIS
157	Dynamic pricing for flight services	In this project, a computer program with two parts are developed for simulating consumer behaviour, and dynamically adjusting the prices of different add-ons (included luggage, food service, etc.) included in flight tickets to maximise profits. The program should take into consideration the customers' willingness to pay for the add-ons, as well as the price of producing them. The program should be tested with different consumer behaviour configurations.	BMIS
158	Dynamic pricing for flight tickets	In this project, a computer program with two parts are developed for simulating consumer behaviour, and dynamically adjusting flight ticket prices to maximise profits. The program should be tested with different consumer behaviour configurations.	BMIS

159	Dynamic pricing for hotels	In this project, a computer program with two parts are developed for simulating consumer behaviour, and dynamically adjusting hotel room prices to maximise profits. The program should be tested with different consumer behaviour configurations.	BMIS
160	Dynamic pricing for restaurants	In this project, a computer program with two parts are developed for simulating consumer behaviour, and dynamically adjusting restaurant prices to maximise profits. The program should be tested with different consumer behaviour configurations.	BMIS
161	Dynamic pricing for train tickets	In this project, a computer program with two parts are developed for simulating consumer behaviour, and dynamically adjusting train ticket prices to maximise profits. The program should be tested with different consumer behaviour configurations.	BMIS
162	Speech emotion recognition using convolutional neural networks (CNN)	Use CNN to implement a speech emotion recognition system. The project will employ the publicly available voice dataset recorded by professional actors (Ravee, Crema, Savee and Tess) to identify sadness, anger, disgust, fear, and happiness. [Data: https://www.kaggle.com/datasets/dmitrybabko/speech-emotion-recognition-en/data]	ALL
163	Speech emotion recognition using recurrent neural networks	Use LSTM to implement a speech emotion recognition system. The project will employ the publicly available voice dataset recorded by professional actors (Ravee, Crema, Savee and Tess) to identify sadness, anger, disgust, fear, and happiness. [Data: https://www.kaggle.com/datasets/dmitrybabko/speech-emotion-recognition-en/data]	ALL
164	Speech emotion recognition with support vector machine (SVM)	Use SVM to implement a speech emotion recognition system. The project will employ the publicly available voice dataset recorded by professional actors (Ravee, Crema, Savee and Tess) to identify sadness, anger, disgust, fear, and happiness. [Data: https://www.kaggle.com/datasets/dmitrybabko/speech-emotion-recognition-en/data]	ALL
165	Video classification with 3D convolutional neural networks	Implement a 3D convolutional neural network and train it for a video classification task using publicly available video classification datasets.	AI/CS
166	Video classification with convolutional and recurrent neural networks	Implement a deep model using CNN for image feature extraction and a recurrent neural network based on e.g., LSTM, for video action classification. Train and test the model using publicly available video action recognition datasets.	AI/CS
167	Point cloud classification with deep learning	Implement a deep learning model for point cloud classification, and then train and test the model using publicly available point cloud datasets.	AI/CS
168	Music genre classification with deep learning	Implement a deep model for music genre classification. Train and test the model using publicly available music genre recognition datasets.	AI

169	Song detection with deep learning	Implement a deep learning model for recognising a song, and then train and test the model using publicly available song recognition datasets.	AI
170	Driving scene segmentation using the Cityscapes dataset	This project involves developing a deep learning model for semantic segmentation of urban driving scenes using the Cityscapes dataset. The goal is to classify each pixel into categories like roads, cars, and pedestrians, aiding autonomous driving systems in understanding and navigating complex urban environments. [Ref: kaggle.com/code/tr1gg3rtrash/car-driving-segmentation-unet-from-scratch]	AI/CS
171	Video Editing Automation Script	This project builds a script that automates basic video editing tasks like trimming, concatenating, adding watermarks, or fading in/out audio. It will use FFmpeg and Python as the core video and audio processing tool for multimedia tasks.	ALL
172	Video Summarization Using Deep Learning	This project will develop a basic video summarization tool that automatically selects key frames from a video to create a concise summary. It will also explore additional features such as frame importance scoring and a simple user interface to enhance usability. [Ref: kaggle.com/code/rushikeshhiray/rushikesh-hiray-vid-summary].	AI/CS
173	Supply Chain Optimization Using Python	This project involves developing a Python-based supply chain optimization project to minimize costs by modelling inventory management, transportation routing, and production planning. It aims to use libraries like PuLP for linear programming, NetworkX for routing, and pandas for data analysis to optimize inventory levels, delivery routes, and production schedules. [Data: kaggle.com/c/inventory-optimization]	ALL