**Project Portfolio**

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**Data Scientist**

**Project STACK**

1. Company Bankruptcy Prediction Machine Learning Project
2. Ken Garff Automotive Remote Purchase Database Modelling and Design
3. Air Quality Index Data Analysis
4. House Price Prediction Using Multiple Linear Regression
5. AdviseInvest Case Study
6. Fast Food Outlet’s Nutrients Analysis
7. Alcohol Detection & Automatic Engine Lock Prototype
8. Vibration Data Analysis of Machines to Predict Faults
9. Laser Maze Game

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| **PROJECT DESCRIPTION**   1. Company Bankruptcy Prediction Machine Learning Project  * Analyzed bankruptcy data from the Taiwan Economic Journal for the years 1999–2009 using frameworks and libraries in Python. Performed EDA including correlation & outlier analysis, plotting, scaling and cross validation. * Developed and compared classification metrics for Decision Trees, Logistic Regression, KNN, SVM, Random Forest, Bagging Classifier and XG Boosting models along with ROC curve & AUC score. Tuned hyperparameters using Grid and Random Search to improve model performance. * [PROJECT FILES](https://github.com/Abinav-Yadamani/Company-Bankruptcy-Prediction-Machine-Learning-Project-)  1. Ken Garff Automotive Remote Purchase Database Modelling and Design  * Designed a database from scratch including Conceptual, Logical, and Physical database models, to meet the business requirements. The designed database ensures a seamless experience for customers while maintaining well-structured records for the organization. Analyzed Data in SQL and gathered insights using Power BI. * [PROJECT FILES](https://github.com/Abinav-Yadamani/Ken-Garff-Database-Modelling-Design)  1. Air Quality Index Data Analysis  * Created a database to store real world data pertaining to Air Quality Index from 2001 to 2021. Generated a report through analyzing this data in SQL. Used visuals created in Power BI to show key observations. * [PROJECT FILES](https://github.com/Abinav-Yadamani/Air-Quality-Index-Data-Analysis)  1. House Price Prediction Using Multiple Linear Regression  * Predicted house prices in Ames by cleaning & transforming the data, imputing values, developing a Linear Regression model and tested for overfitting. Plotted residual graphs to verify the model performance. * [PROJECT FILES](https://github.com/Abinav-Yadamani/House-Price-Prediction-Using-Multiple-Linear-Regression)  1. Fast Food Outlet’s Nutrients Analysis  * The dataset provides a comprehensive breakdown of the nutritional contents of fast food items from the popular fast food chains namely McDonalds, Burger King, Arbys, Dairy Queen, Chick Fil-A, Sonic, Subway and Taco Bell. Created a markdown report in R with key insights from my analysis. * [PROJECT FILES](https://github.com/Abinav-Yadamani/Fast-Food-Outets-Nutrients-Data-Analysis)  1. AdviseInvest Case Study  * Developed a Supervised Classification Tree Model which predicts customers who will lift the call from the sales representatives. Used the model to devise and recommend solutions for the staffing problem faced by AdviseInvest. **Improved the accuracy of the model by 30%** from that of the initial majority class group.  1. Vibrational Data Analysis of Machines to Predict Faults  * Analyzed and compared vibrations from healthy and faulty machines to build a database of vibrational patterns which helps to recognize and predict faults at an early stage. * This helps to prevent hazards along with reducing wear and tear of the machines.  1. Alcohol Detection & Automatic Engine Lock Prototype  * Developed a prototype that automatically stops the motor upon sensing alcohol presence. * Built a circuit using MQ-3 sensor that cuts off current when alcohol levels are beyond the set limits.  1. Laser Maze Game  * Ideated & organized “Laser Maze” game as part of the technical festival held at college. My event sold the highest tickets with the best ROI. Received funding from sponsors to host the same event in the following year's festival. * Built circuits using Light Dependent Resistors and buzzers in such a way that when light from the lasers is obstructed then current passes to the buzzers producing sound. * The player had to dodge the lasers and reach the end point to finish the game. |  |
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