

**Proposal**

**For**

**AI & ML Project**

**School of Computing**

Laptop Price Prediction

**Submitted by**

**Deki Lhazom(12210048)**

**Kuenzang Wangdi(12210020)**

**Chimmi Rinzin(12210002)**

**Dawa(12210047)**

**Pema Yangchen(12210025)**

**Gyalpozhing College of Information Technology**

**Problem Statement**

As technology has taken over the world, people have grown increasingly reliant on it. Because it is necessary to complete the procedure, there is a significant demand for technological devices. One technology gadget, the laptop, has become crucial for working in the modern world.

Laptops tend to differ due to the rising demand for them from workers, students, and gamers. Laptop prices are subject to significant variations based on various factors such as their specifications, brand, and other variables. Customers may face challenges in assessing the reasonable market value of a laptop or determining if they are receiving a reasonable deal.

**Aims**

To provide more accurate and reliable forecasts of future prices, improve decision making and enhance the efficiency and effectiveness of the laptop market.

**Goal**

The goal is to train a model that can take in laptop features and accurately predict the price of a laptop, which can be useful for both buyers and sellers. Buyers can use the model to get an idea of the fair price of a laptop they are interested in, while sellers can use it to set a competitive price for their products.

**Objectives**

* To build ML model
* Extract features, pre-process, clean, analyze, interpret and interpret and visualize through dashboard.
* Develop 90% accuracy of ML model

**Technology**

Programming Language

* Python

Data preprocessing tools

* Pandas
* Numpy
* SciKit\_Learn

Development Environments

* Jupyter Notebook

Visualization tools

* Matplotlib
* Seaborn

**Analytic Process**

1. **Data collection**

* Gather relevant data which includes historical pricing data for various laptop models and laptop specifications brands for the project.

1. **Data preprocessing**

* Data must be preprocessed for analysis. So preprocessed includes cleaning the data, handling missing values and performing feature engineering to create new features.

1. **Exploratory data analysis**

* Conduct exploratory data analysis to gain a better understanding of the data and identify any patterns or relationship between variables.

1. **Model Selection**

* Select suitable machine learning model for price prediction task which involves trying out different algorithms and techniques.

1. **Model training.**

* Train on the preprocessed data with selected machine learning models which involves fitting the model to the training data and adjusting its parameter to optimize its performance.

1. **Model evaluation**

* Evaluate the model that has been trained to determine its performance on the test data.

1. **Model tuning**

* If the model's performance is not satisfactory, it may be necessary to adjust its parameters or try different techniques to improve its performance.

1. **Deployment**

* Finally, once the model has been developed and tested, it can be deployed for use in predicting laptop prices.