

AL2002 – Artificial Intelligence Lab

Assignment # 2

Note:

- Please ensure to submit both a PDF document and a Python file containing your code on the classroom.
- Copied assignment will be awarded **zero** marks.
- Submit your file in this format (roll-no-name) i.e (23P-1234-Ali.pdf).

Problem: 1 - Enhancing Real Estate Valuation Models for Zingat: A Data-driven Approach

Real Estate Valuation Model:

You are tasked with building a model to estimate the value of real estate for **Zingat**, an online marketplace connecting potential buyers with real estate offices. Founded in 2015, **Zingat** operates as a prominent online marketplace for real estate transactions in **Turkey**. The dataset provided contains information on 225738 listings from **Zingat.com**. Your objective is to develop a model that outperforms existing models in terms of accuracy and economic reasoning.

Assignment Tasks:

1. Data Preparation:

- Clean the dataset by handling missing values, outliers, and any inconsistencies.
- Explore and understand the variables in the dataset.
- Determine which variables are relevant for predicting the value of real estates.

2. Feature Engineering:

- Create new variables if necessary, considering economic intuition and domain knowledge.
- Transform variables to enhance their predictive power.

3. Model Building:

- Select appropriate deep learning models for real estate valuation.
- Train and assess the deep learning model's performance using relevant metrics.
- Conduct a comparative analysis between the deep learning model and traditional statistical approaches.
- Train and evaluate your model using suitable performance metrics.
- Compare the performance of your deep learning model with statistical model.

4. Model Presentation:

- Prepare a report summarizing your approach, findings, and conclusions.
- Present your model's performance in a clear and concise manner.
- Provide recommendations for further improvements or enhancements to the model.

Submission Guidelines:

- Submit your assignment report along with the code used for data preprocessing, feature engineering, and model building.
- Include explanations and interpretations of key results and findings.

By leveraging data-driven insights and technological innovations, **Zingat** aims to optimize the real estate transaction process, empower users with valuable information, and foster transparency and efficiency in the **Turkish** real estate market.