



Predicción de precios de viviendas con Machine Learning

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A photograph of a modern, minimalist white house with geometric shapes and flat roofs. A large circular overlay is centered on the image, containing the text '1. Definición del problema'. The house has a light blue wall on the left and a white wall on the right. There are two windows: a tall, narrow one on the left and a small square one on the right. A paved path leads to the entrance, and there is a green lawn in the foreground. A large tree is visible on the right side of the house.

1.


Definición del
problema

Problema: Estimar el precio de una vivienda

Dataset: House Prices (Kaggle)

Variable objetivo: SalePrice

Valor: útil para inmobiliarias, bancos y compradores



A photograph of a modern, single-story building with a long, low profile. The building features a series of large, arched openings on the right side, revealing an interior space with furniture. The facade is a light, textured material, possibly stucco. To the left, there are some windows and a small set of steps. In the foreground, a calm body of water reflects the building and the sky. The sky is a clear, pale blue. A large, semi-transparent circular graphic is overlaid on the center of the image, containing the text '2. Hipótesis y valor'.

2.

Hipótesis y valor

A modern kitchen with dark cabinetry, a large window with a mountain view, and a central island. Two brown oval callouts are overlaid on the image, containing text about real estate valuation.

Hipótesis

Las características físicas y de
ubicación influyen en el precio

Valor

Apoyo a decisiones
inmobiliarias

Predicciones automáticas permiten tasaciones
rápidas y objetivas

A modern, two-story house with large glass windows and doors is illuminated from within, casting a warm glow. The house is situated behind a large, dark swimming pool that reflects the lights. A palm tree is visible on the left side of the frame. The sky is a deep orange and red, suggesting sunset or sunrise. A large, semi-transparent circle is overlaid on the center of the image, containing the text.

3.

Análisis Exploratorio (EDA)

Gráficas:

- Distribución de SalePrice
- Relación GrLivArea vs SalePrice

Observaciones:

- Precio sesgado a la derecha
- GrLivArea correlaciona positivamente con SalePrice

A modern, minimalist house with white walls and blue accents. The house features a large blue rectangular section in the center, flanked by white walls. There are several windows, including a tall, narrow one on the left and a small square one on the right. The house is set on a green lawn with some trees in the background.

4.

Preprocesamiento y modelo

- Limpieza de nulos (media/moda)
- Codificación de variables categóricas (One-Hot Encoding)
- Modelo: Random Forest Regressor
- Número de árboles y parámetros principales
- Breve explicación: combina múltiples árboles para reducir sobreajuste





5.

Resultados y
análisis crítico

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- A modern kitchen interior with large windows, a central island, and contemporary decor. The image is overlaid with a semi-transparent dark blue rectangle containing text, and two large white circles are positioned on the left and right sides of the frame.
- Métrica: RMSE \approx 28.000 \$

Observaciones:

- Buen desempeño en precios medios
- Mayor error en casas muy caras
- Hipótesis confirmada parcialmente

A modern, two-story house with large glass windows and doors is illuminated from within, casting a warm glow. The house is situated behind a large, dark swimming pool that reflects the lights. A palm tree is visible on the left side of the frame. The sky is a deep orange and red, suggesting sunset or sunrise. Two overlapping circles are centered over the image: a smaller dark teal circle on top and a larger light brown circle below it.

6.

Conclusión

- Hipótesis confirmada parcialmente
- Limitaciones: pocas muestras extremas y factores externos no incluidos

Mejoras futuras: más datos, modelos avanzados, feedback iterativo

Mensaje final: Machine Learning ayuda a estimar precios de forma objetiva