🎧 Headset 🎧 Price Prediction & Recommendation

Chau Bui

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Background

About the app

- Allows users to input headset features and receive a **predicted price** and **similar headset recommendations**
- Helps users better understand headset pricing
  → more informed purchasing decisions

EDA

- Data was obtained from PCPartPicker using an API
  - Contained 2,417 headset entries with the following columns:
    'brand', **'model'**, **'form_factor'**, **'frequency_response'**,
    'has_microphone', **'is_wireless'**, **'type'**, **'color'**, **'price'**
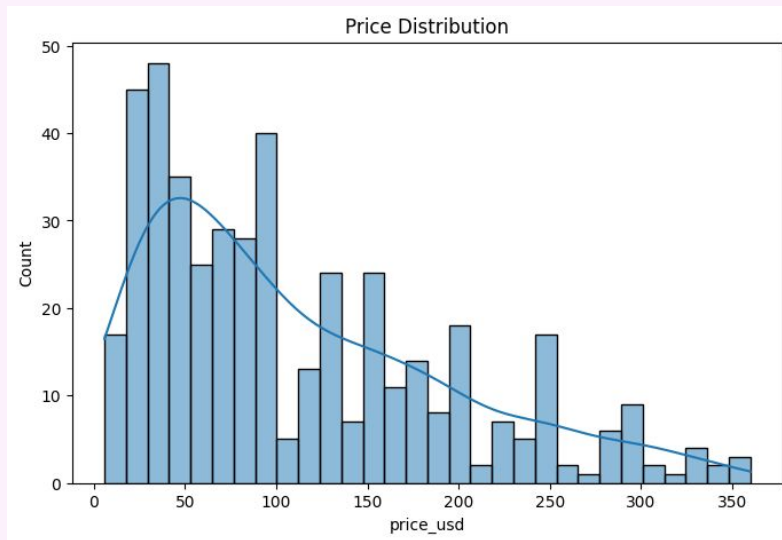
Methodology

- Data Cleaning & Feature Engineering
  - Removed rows with null values
  - Converted binary features to 0/1
  - Encoded categorical features

- Model
  - Key features: '**brand_encoded**', '**min_freq**', '**max_freq**', '**is_wireless**', '**form_factor**'
  - Model used: Random Forest

- Deployment
  - Streamlit App → Flask API → Docker Image → Deployed on Google Cloud Run

Headsets Price Predictor 🎧

Select Brand

Asus ▾

Minimum Frequency (Hz)

300

3   300

Maximum Frequency (Hz)

20000

2000   55000

Connectivity

Wireless ▾

Select Form Factor:
🔘 Circumaural
⚪ Supra-aural

How it works:

User inputs features
    → predicted price
    → similar headsets

click here → | Predict Price |

Predicted Price: $166.69

Category: Premium

Here are some similar headsets:

	brand	model	price_usd
0	Sennheiser	GSP 600	178
1	SteelSeries	Arctis Pro	179.99
2	AKG	K371-BT	178.8