

RESULTS

CHALLANGE 4



... ALL YOUR FRIGES ARE BELONG TO US!

CHALLANGE

Rewarding households for saving energy with an open data approach

WE BUILT CREWS TAKING CARE OF…

1. Analysis and Research

   Focus on gathering data on the topic in general and identify options

2. Data Engineering

   Focus on building the database and clustering to estimate energy consumption based on indirect features

3. Data Science

   Analysing frige images using GPT and manuals using text2image

4. Web Development

   Create a small webapplication to test user interaction

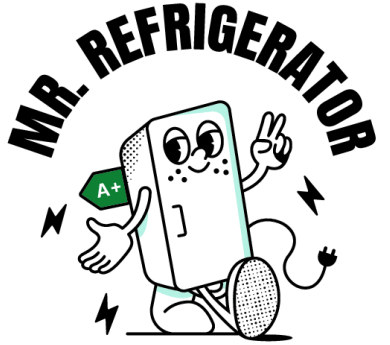


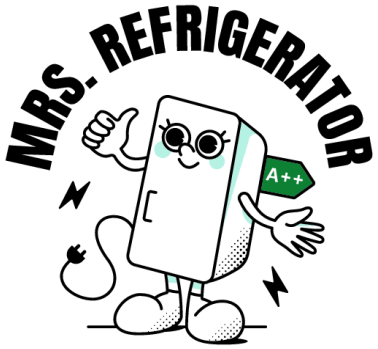




ANALYSIS AND RESEARCH - DATA AND FACTS

- 1.4 Mio[1] households live in their own property - 36% of all households (2022)
- 2.4 Mio[1] households are tennants, form which 60%-70%[2] are managed by property management
- If a tennant wants a new fridge, the property management has to be asked
- Since Utility companies (BFE) and communities (BFU) have incentives to reduce CO2 and increase Energy Efficiency, how can we "motivate" property managements to support the energy transition?

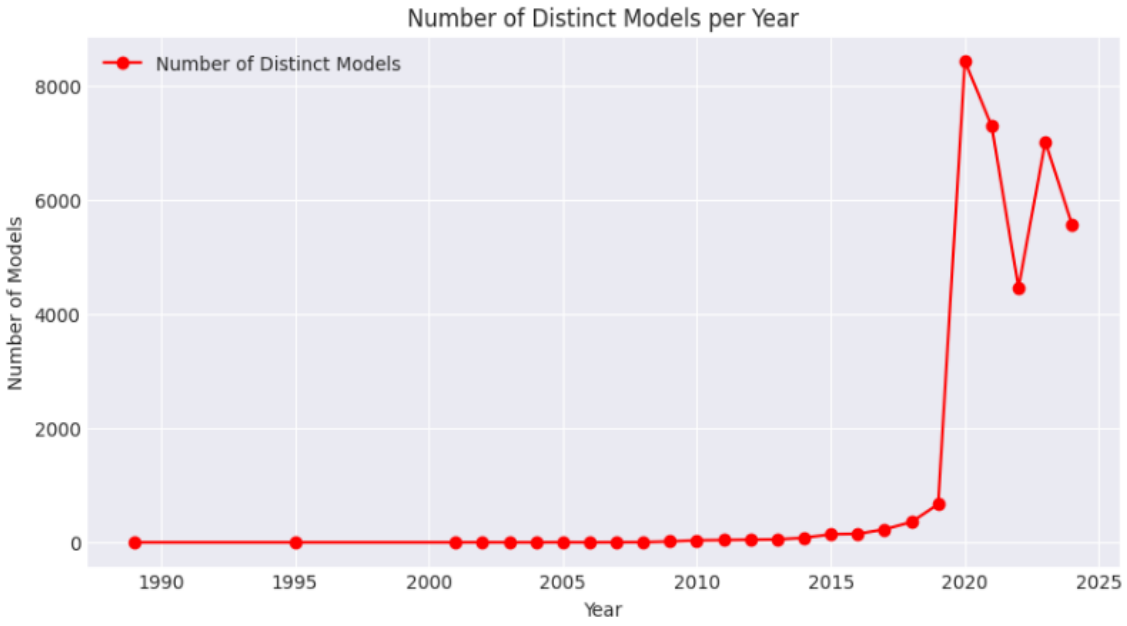


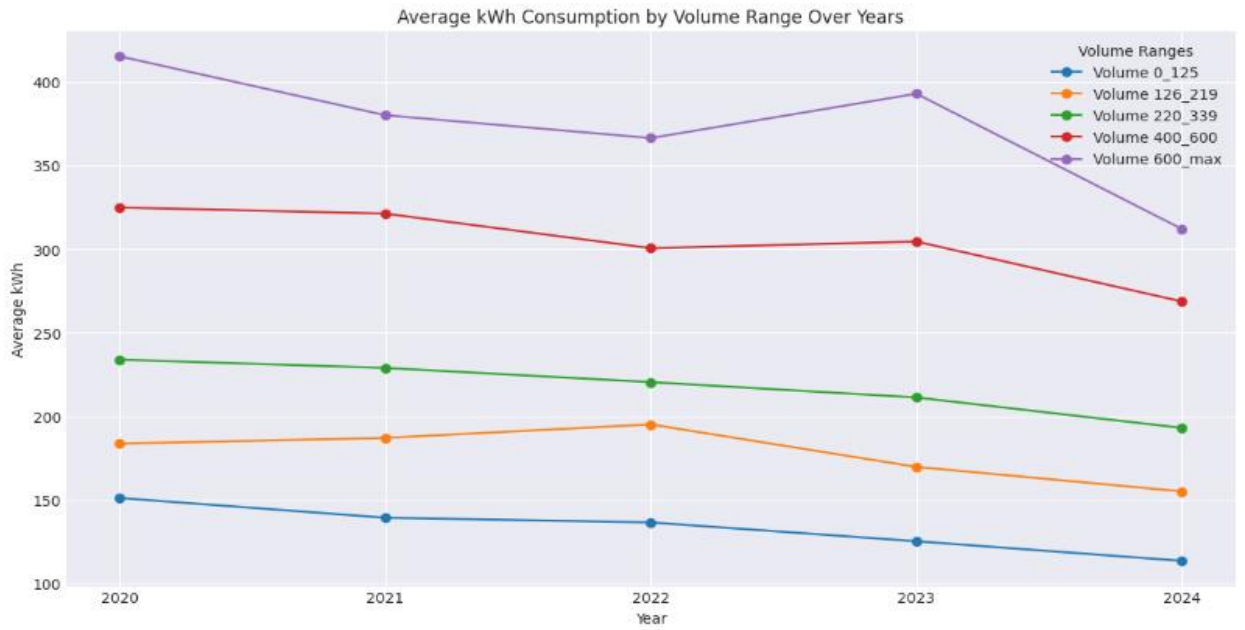


[1] https://www.bfs.admin.ch/bfs/de/home/statistiken/kataloge-datenbanken.gnpdetail.2024-0421.html
[2] no actual data. Estimation by Swiss Real Estate Institute: Prof. Dr. Peter Ilg by telephone
[3] Basic electricity supply of the Primeo Netz AG

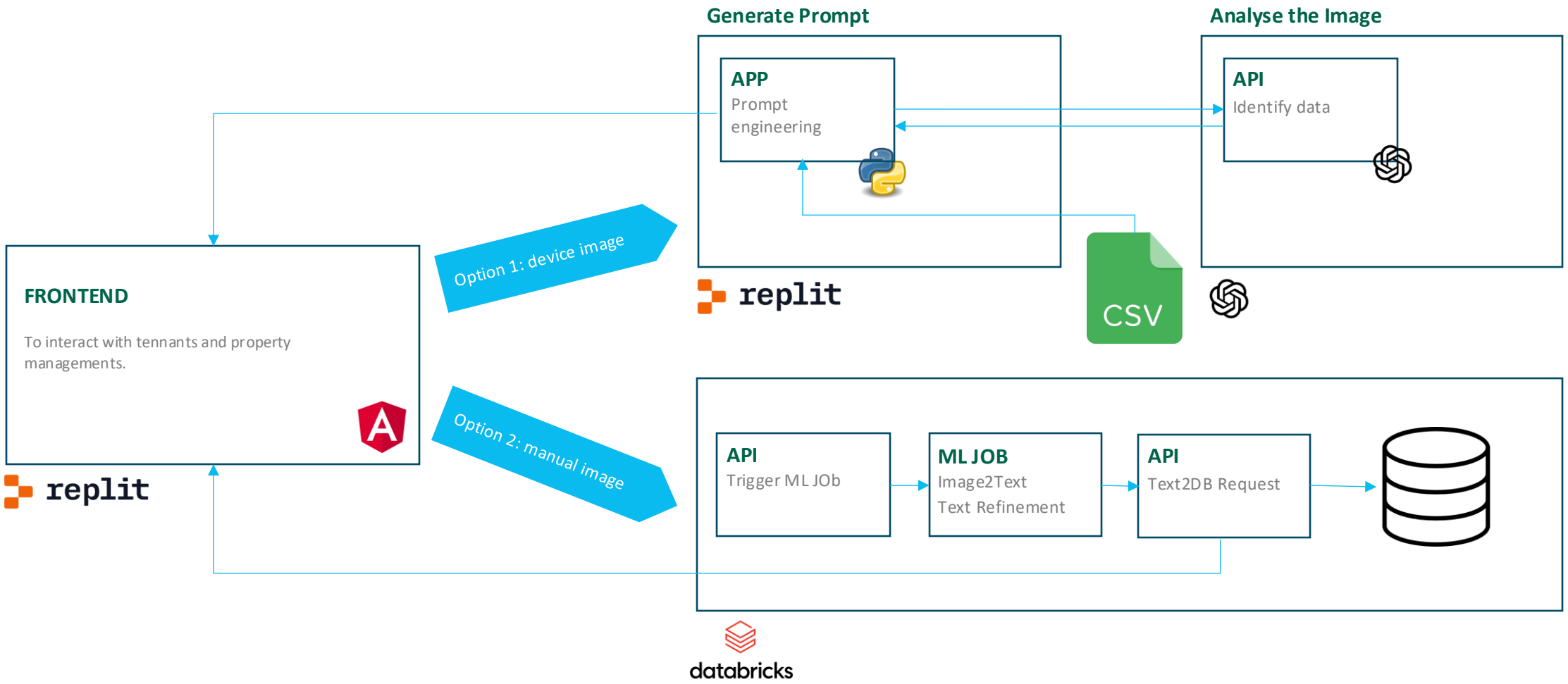
DATA ENGINEERING - GENERIC DATA

- We got raw data from EPREL for 38'680 fridges
  - Most important fields: model id, volume, consumption per year in kWh/a, market start date
- Idea clustering by volume to calculate average consumption per year based
- Problem amount of fridges before 2020 is insufficient to calculate robust averages
- Solution calculate averages for years with insufficient data with linear extrapolation





SOLUTION DESIGN



DEMO - Main App and Device Identification



Challenge #4: Mr. and Mrs. Refridgerator

LANDLORD
Dashboard
Devices
TENANT
Dashboard
Add device

Welcome back!

Your Efficiency Rank

A Excellent Energy Efficiency



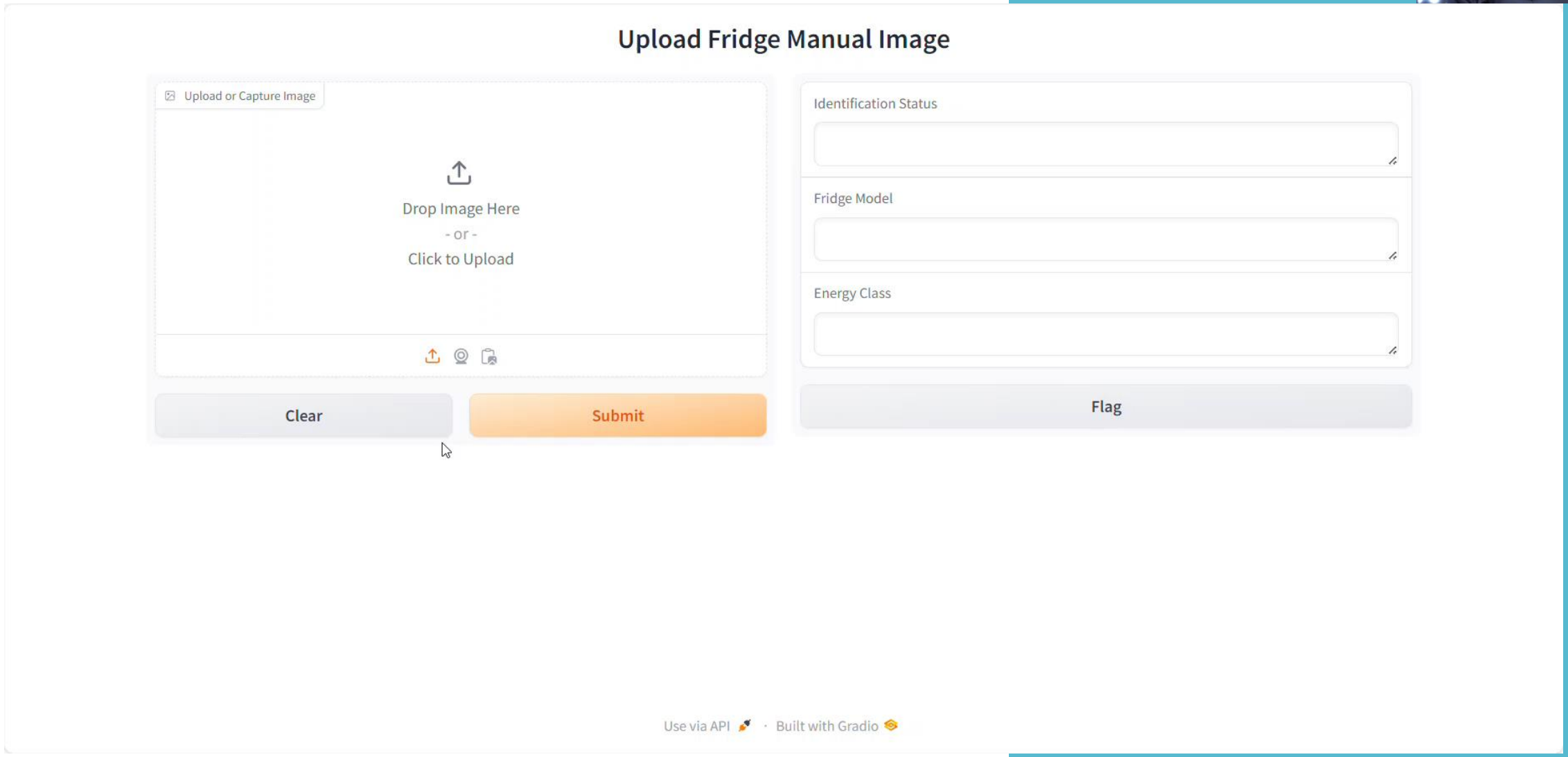
Compare to others

Filter by name

1. Sturzenegger Immobilien
2. Fischermätteli Immo
3. Micasa
4. ZüriEstate
5. Bern Apartment Group
6. Luzern Living
7. Alpenhaus Properties
8. SwissHome Rentals

DEMO – ImageToText Identification





Q&A

