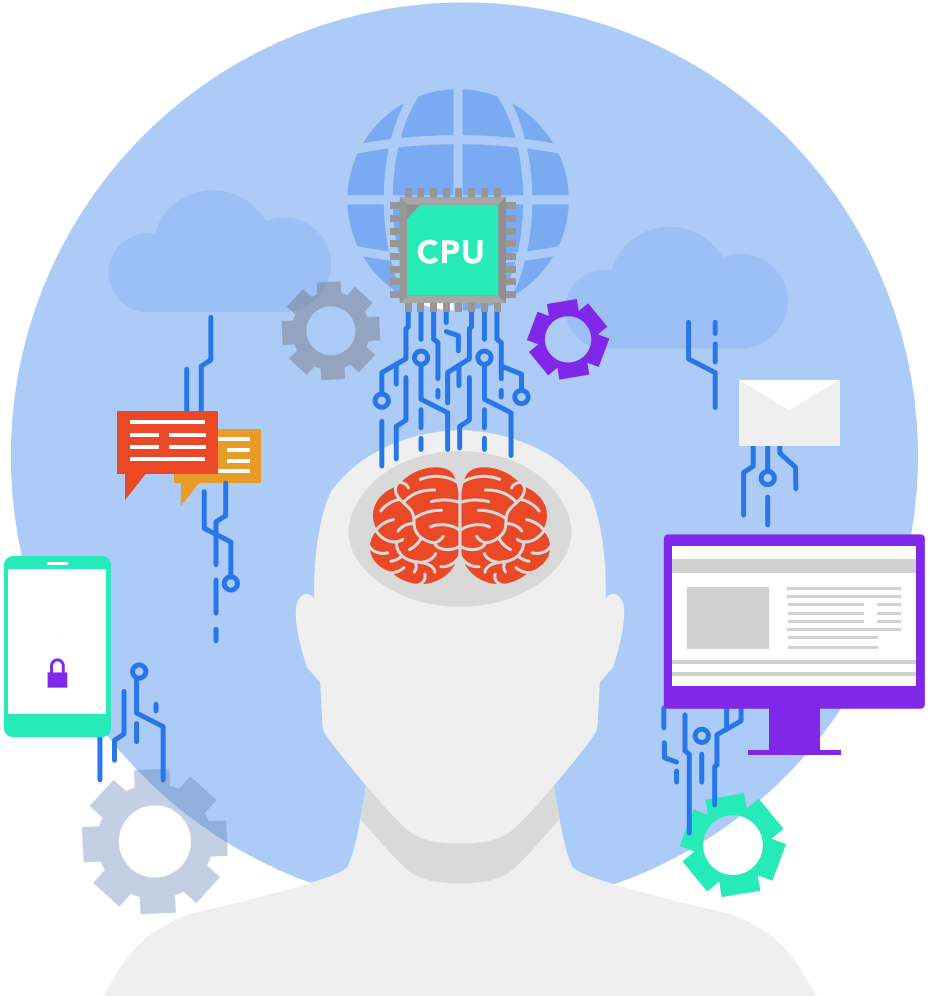


# Machine Learning Containerization

- Maxim Ross

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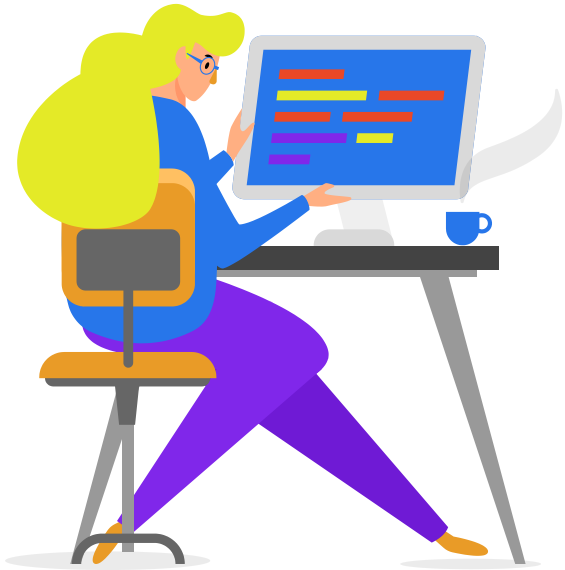
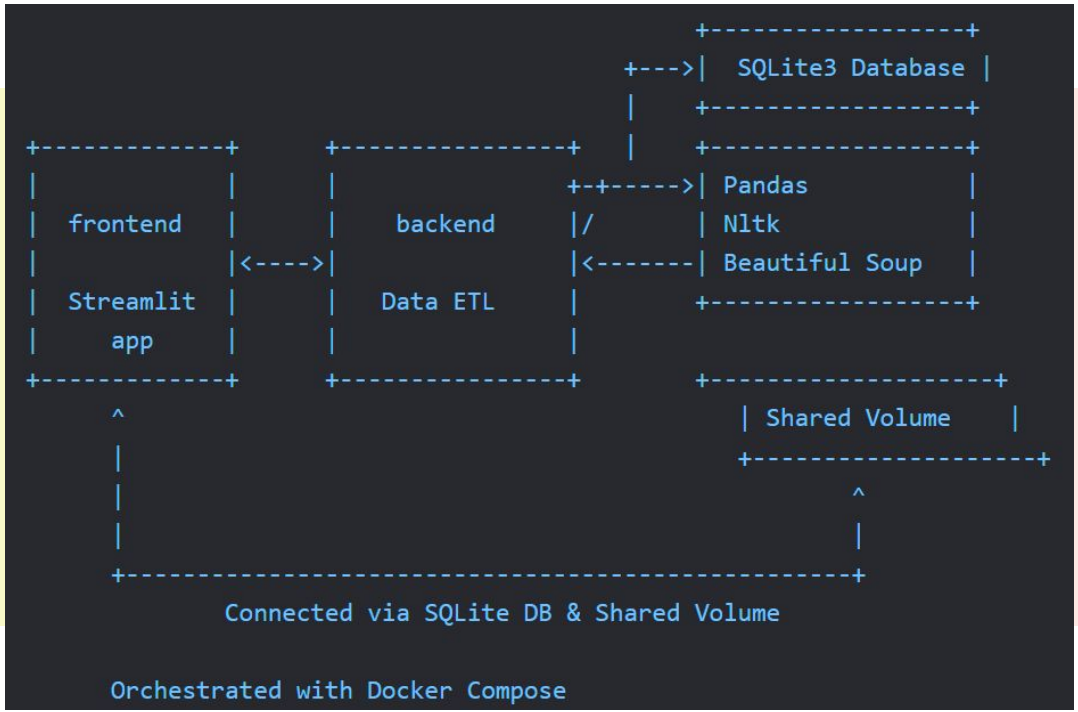
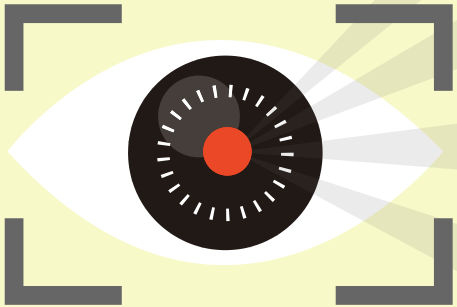


# Framework


SQLite3 Database
frontend
Streamlit app
backend
Data ETL
Pandas
Nltk
Beautiful Soup
Shared Volume
Connected via SQLite DB & Shared Volume
Orchestrated with Docker Compose

# Machine Learning

## Recommendation System



**Collaborative Filtering**

Predicting likely enjoyed content based off of similar users

**Scikit-Surprise**

All modeling done with Scikit-Learns rec. System lib “Surprise”

**Cross-Evaluation**

RMSE and baseline model used to evaluate models

**GridSearch**

Tuning hyperparameters for optimal performance

# Docker Container

01

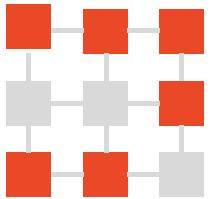


**backend**

Data origin and ETL py script

**Shared Volume**

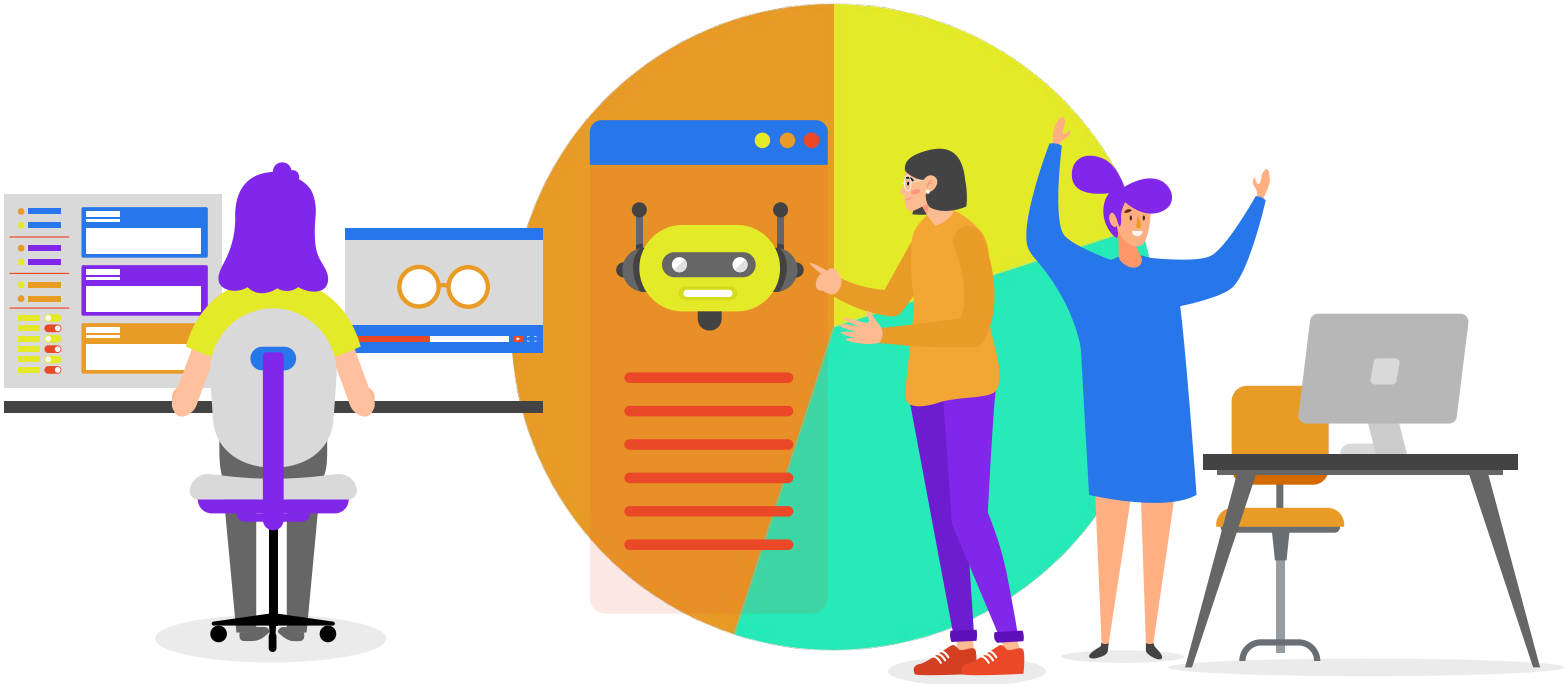
02



**frontend**

Streamlit py script

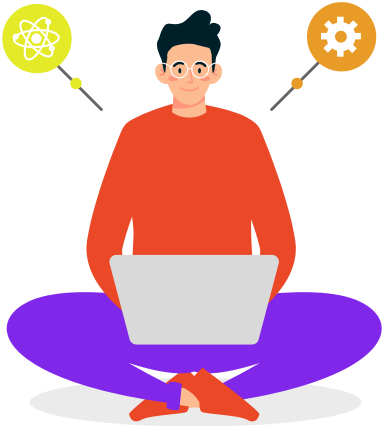
# Demo



# Hurdles

**Learning Docker**
Shared volume was tricky to learn

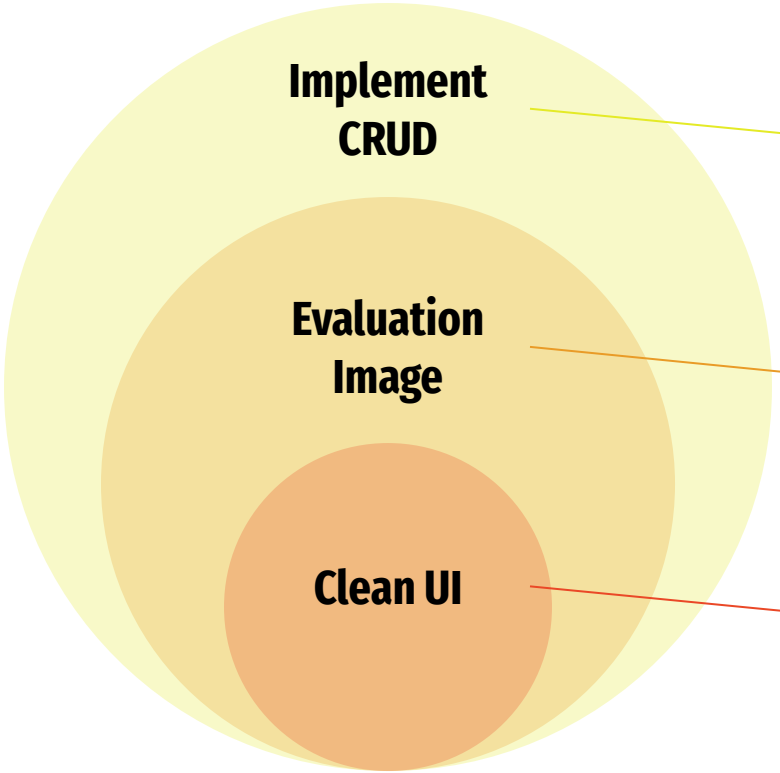
**Docker Compute**
Had to scale down model



**Frontend**
Opted for Streamlit to make frontend easy

**CRUD**
Don’t have a CRUD functionality with ML

# Next Steps

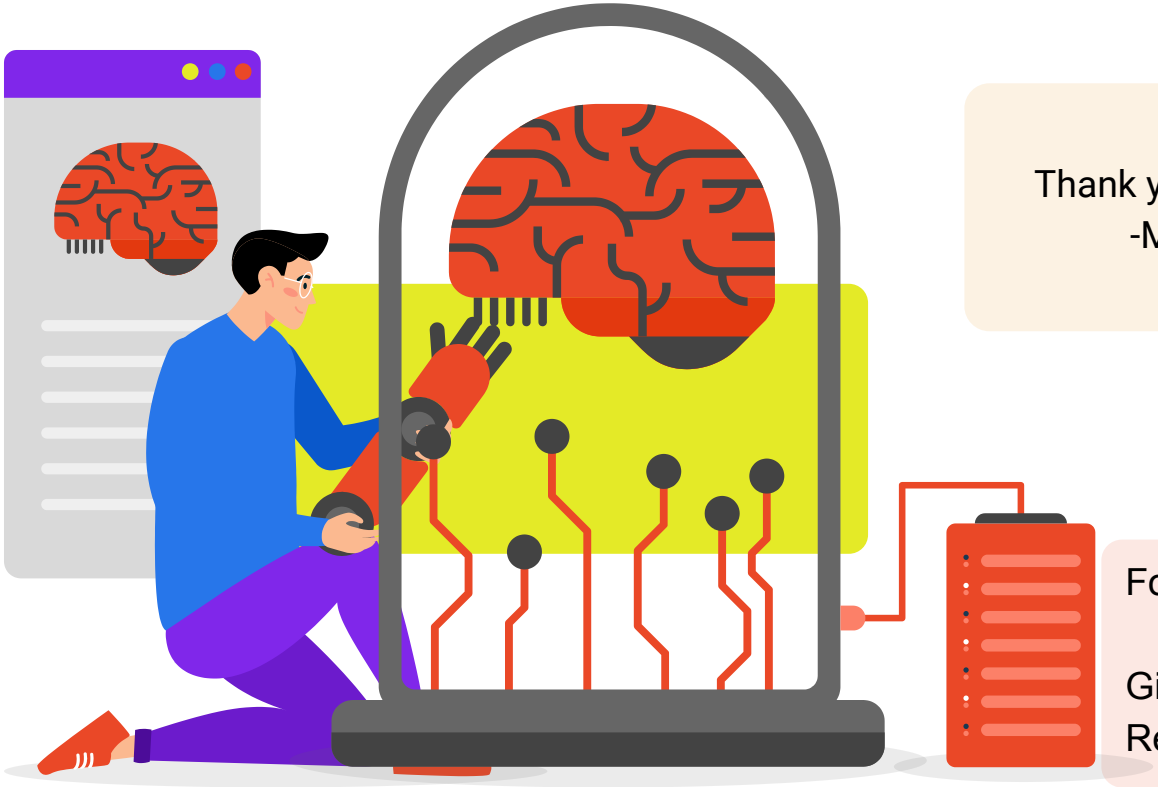



Implement CRUD functionality into rec-system to add new users

Add an image in the container for model evaluation and insights

Venus has a beautiful name, but it's hot

# Questions Welcome!



Thank you for your time.
-Max

For more info:

GitHub: **ImMaxRoss**
Repo: **docker_ML**