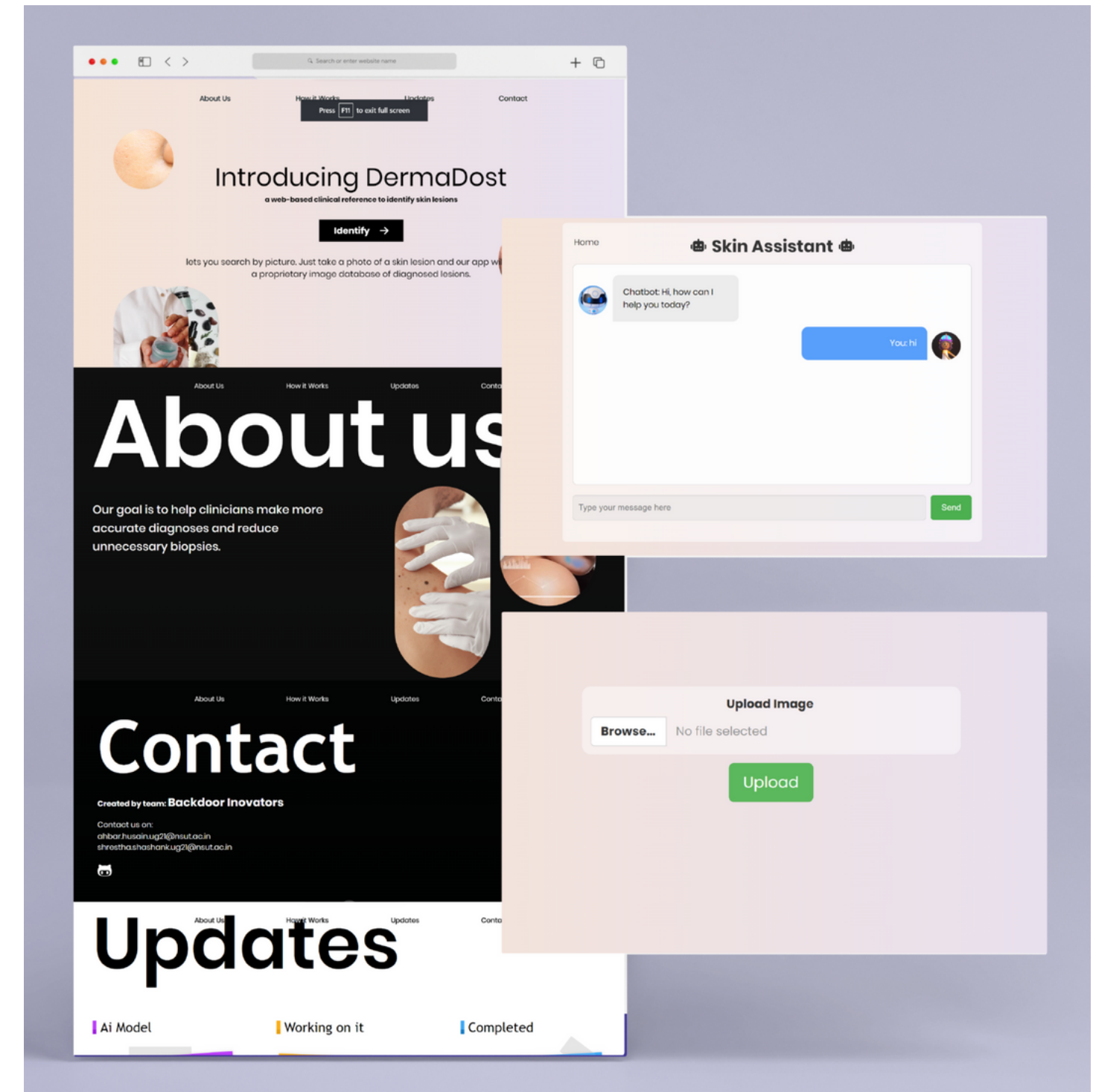


DERMADOST

DermaDost is a prototype web application designed to help users identify various skin conditions and to provide support through a LLM powered skin assistant.



Team CodeFire



AHBAR
HUSAIN



YASH
ARYA

SKIN DISEASES IN INDIA

Skin diseases in India are a major health concern, often leading to severe complications and even fatalities due to delayed diagnosis and limited access to healthcare services. Fungal infections, eczema, psoriasis, and dermatitis are common, exacerbated by factors such as the humid climate and poor hygiene practices.

KEY FEATURES

1

Skin Disease Detection ,can detect 6 skin diseases along with Pimple detection and segmentation

2

Accuracy of 90% + Trained on more than 6000 skin images

3

Multilingual Skin Care Chatbot for Support

4

Skin Product Analyzer with Skin Care Routine Generator

5

Locate nearby dermatologists seamlessly with secure user data handling

Advantages

1

INCREASED EFFICIENCY

Takes lesser time than when done by humans.

2

EARLY DETECTION

Can help detect Skin Diseases early.

3

IMPROVED ACCURACY

No scope for human error.

Advantages

4

DATA COLLECTION

Can provide valuable data on the prevalence of Skin Diseases, helping healthcare professionals and government.

5

COST SAVINGS

Saves money.

6

AFFORDABLE

Easily affordable by economically weak patients.

AI/ML Model

Deep Learning Model:

- 📊 Data Preparation: Data augmentation and meticulous preparation for accurate diagnosis.
- 🚀 Powered by EfficientNetB3: Leveraging transfer learning for top-tier performance.
- 🧠 Custom Classification: Cutting-edge custom classification layers, ReLU activation, and softmax.
- ⚙️ Training Excellence: Categorical cross-entropy loss and Adam optimizer for model updates.
- ⭐ Rigorous Evaluation: Metrics include accuracy, precision, recall, F1-score, and a confusion matrix.
- 🛡️ Model Reliability: Ensured with model checkpoints and Model Checkpoint callbacks

Diverse Dataset
Data Preprocessing
Data Augmentation



EfficientNetB3 Architecture
Pre-trained on ImageNet
Custom Classification Layers



ReLU Activation
Softmax Output

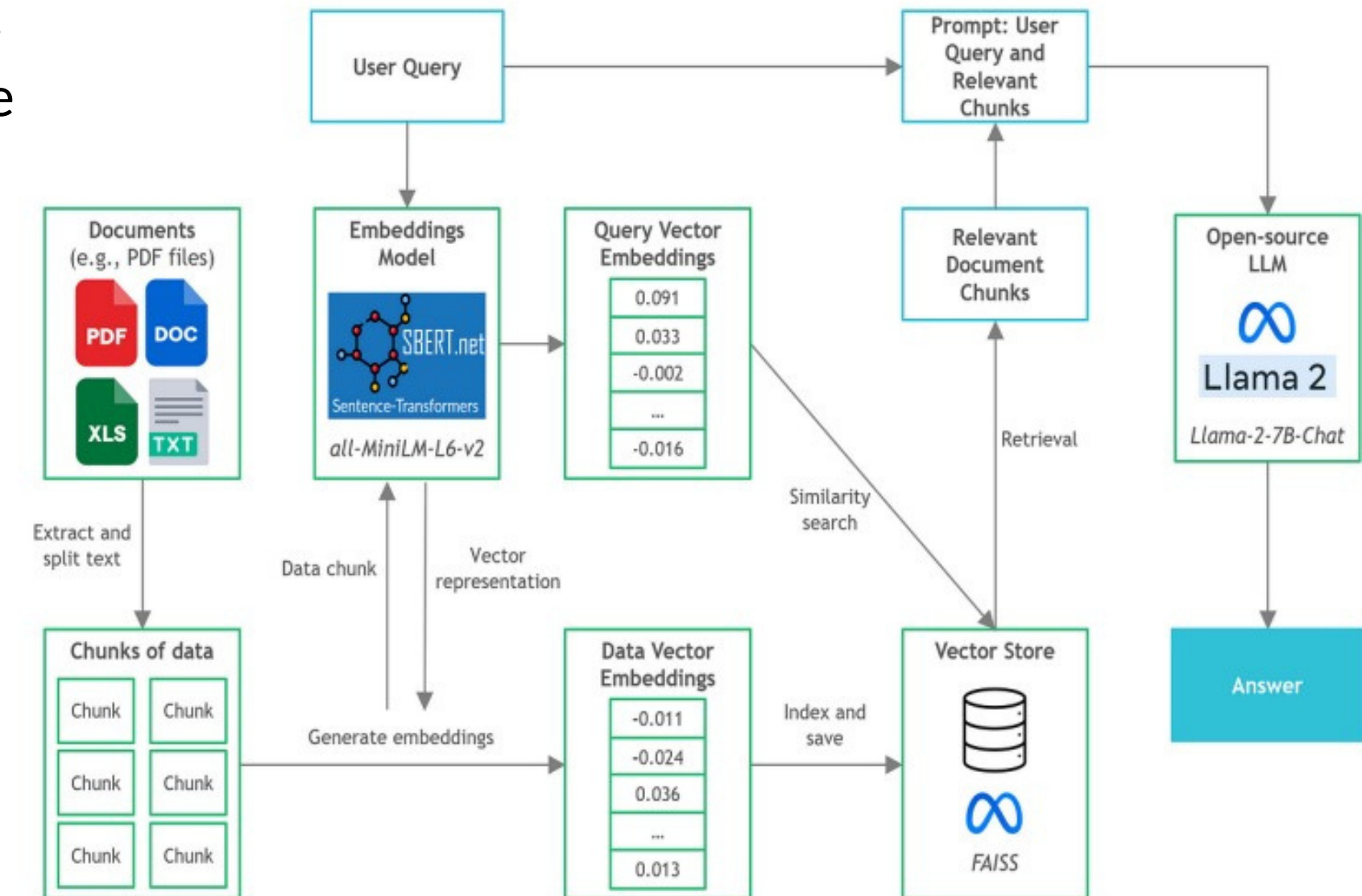


Training with Adam Optimizer
Evaluation Metrics
Model Checkpoints

Skin Care Assistant and Support

Meet the Skin Care Assistant, your expert guide in over 100 languages. It remembers your past chats and responds through both text and audio, making it accessible to people of all ages and abilities.

- 🤖 **Expert Guidance:** A multilingual skincare guide powered by Large Language Model (Llama2).
- 📖 **Reliable Information:** Access to a vector database and authoritative sources like The Ministry of Ayush and Wikipedia.
 - 💬 **Responsive:** Quick, accurate, and high-quality responses.
- 💡 **Contextually Relevant:** Efficient question-answering with the RetrievalQA class.

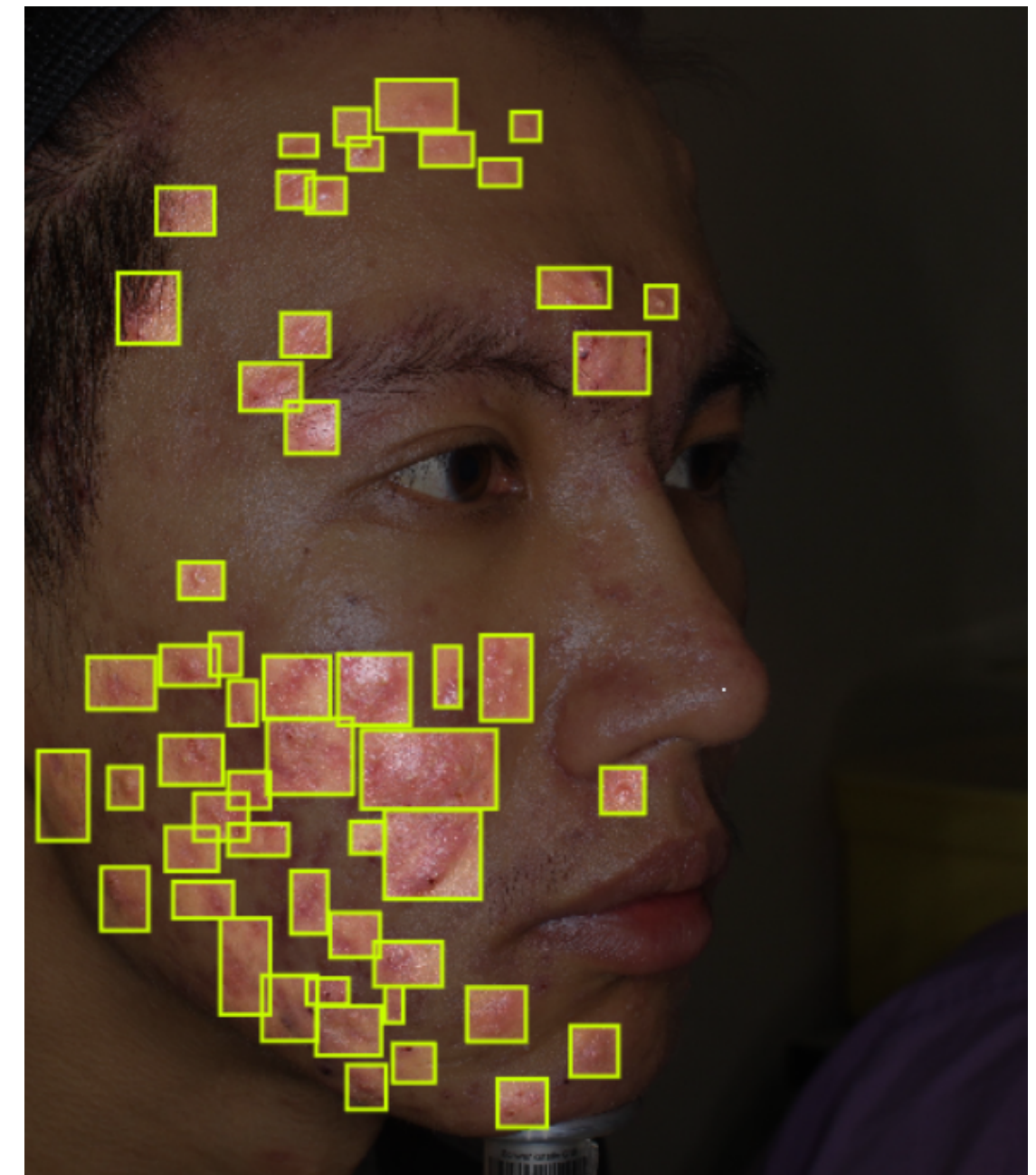


Pimple Detection and Segmentation using Computer Vision

Trained a robust acne (pimples) detection and instance segmentation model using YOLOv8 in computer vision. The model exhibits high precision, enabling accurate tracking of pimple counts in images.

This tool proves invaluable for monitoring changes in acne presence over time, facilitating efficient analysis of skin conditions.

The achieved precision score reflects the model's reliability in discerning and quantifying individual pimples, providing valuable insights for skincare assessment and improvement.



mAP@0.5 value of 38.3

TECH STACK

Front-end

HTML, CSS, Javascript

Back-end

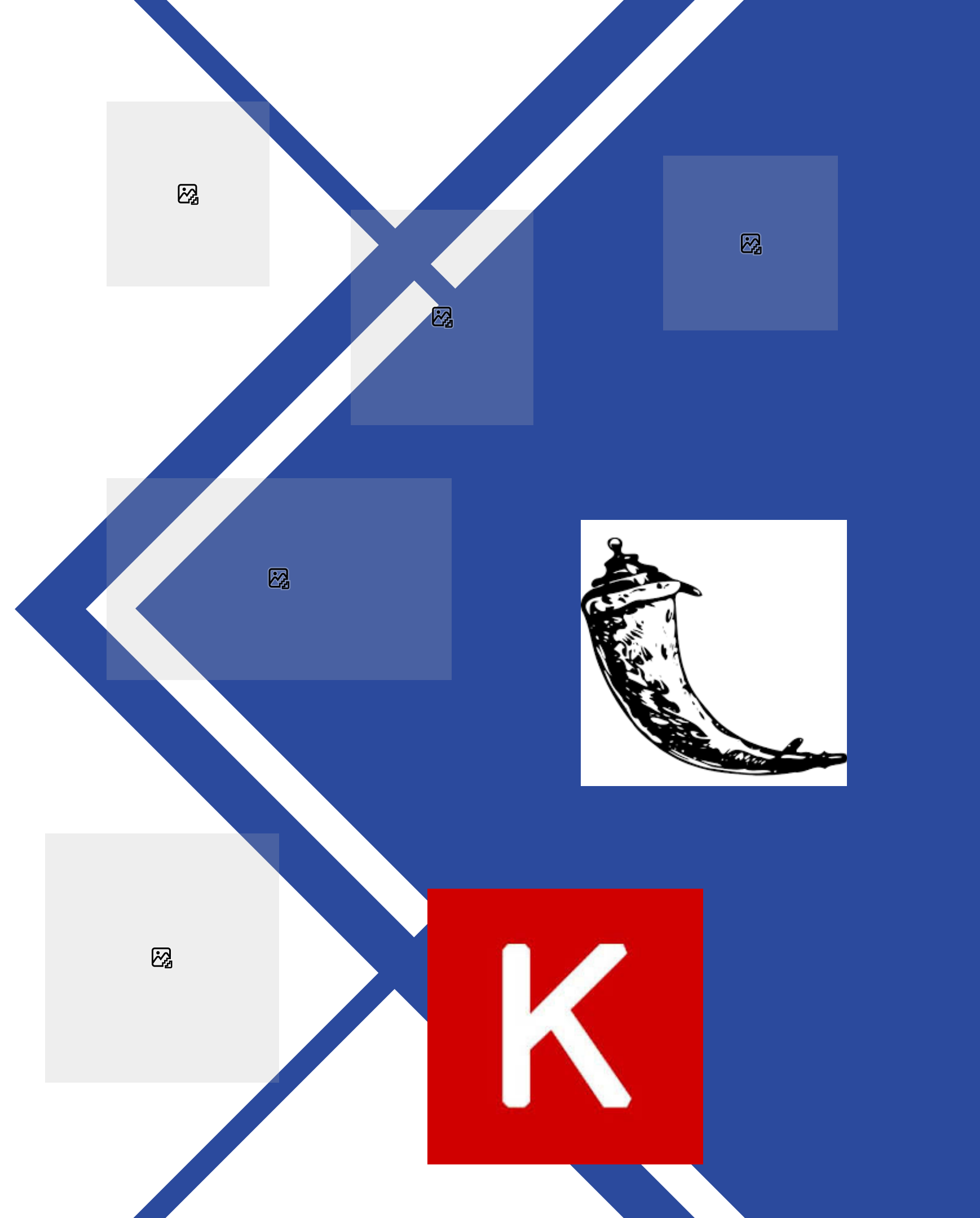
Flask

AL/ML Models

Tensorflow, YOLO

Chatbot

Langchain, HuggingFace, Lama2





QnA