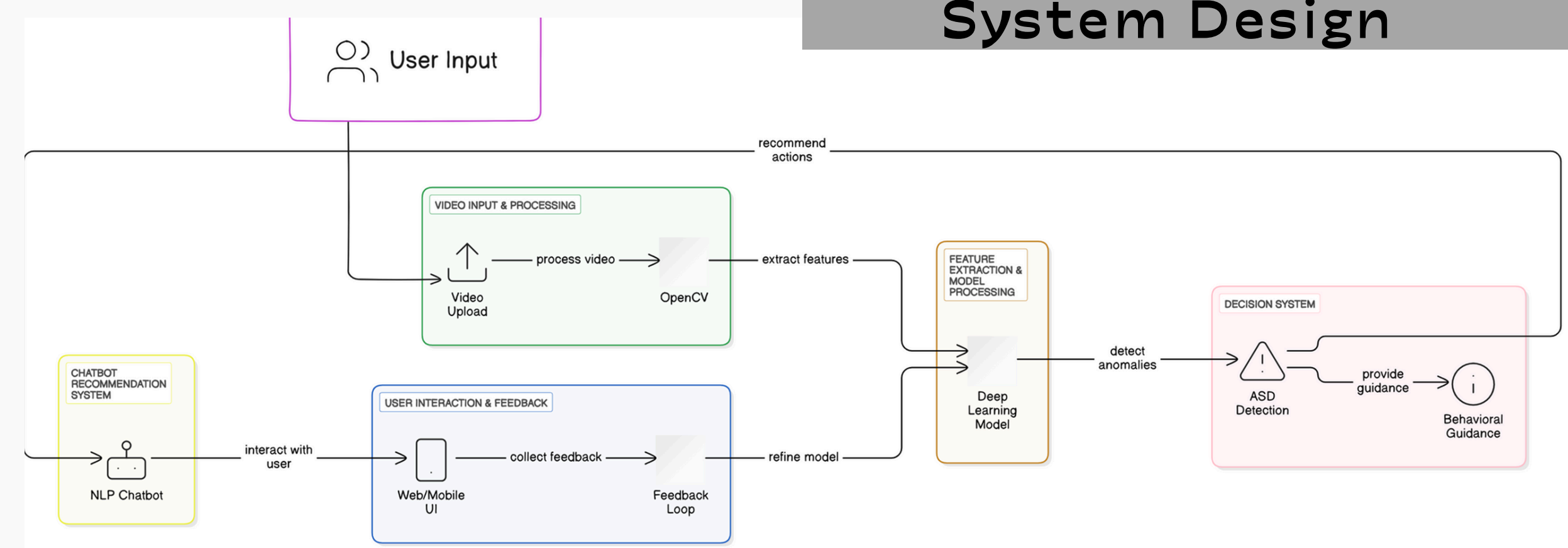


# AUTISM SPECTRUM DISORDER DETECTION

## Abstract

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition that affects social interaction, communication, and behavior. Early detection is crucial for effective intervention, but traditional diagnostic methods are often resource-intensive and not widely accessible. This project introduces an AI-powered solution that leverages video-based analysis to detect signs of autism, combined with a chatbot that offers real-time support and guidance for parents and guardians

## System Design



## Technologies used

- Python – Backend development & video processing
- TensorFlow – Deep learning model (Bi-LSTM) for video classification
- OpenCV – Frame extraction from uploaded videos
- Flask – API for model prediction and communication with frontend
- React.js – Frontend for user interaction and video upload
- Google Colab – Model training and experimentation
- JSON – Communication between frontend and backend

## Conclusion

This project successfully demonstrates the potential of deep learning in early detection of Autism Spectrum Disorder (ASD) through video analysis. By integrating a Bi-LSTM model with a user-friendly interface and chatbot support, the system provides an accessible tool for parents and caregivers. The chatbot offers meaningful guidance, to tell about the severity level

## Team members

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## Problem statement

*Autism Spectrum Disorder (ASD) often goes undiagnosed in early childhood due to a lack of accessible, scalable diagnostic tools. Traditional diagnosis methods are time-consuming, expensive, and require specialized clinical settings. Our project aims to provide an AI-driven, video-based diagnostic tool and a chatbot for early detection and support, making ASD screening more accessible and efficient.*

## Key Features

- Video-based Autism Detection
- Interactive Chatbot Assistance to Severity Insight
- Fast and Easy Prediction
- Web-Based Platform
- Real-Time Prediction

## Results

- Successfully classified child behavior videos as Autistic or Not Autistic using a trained Bi-LSTM deep learning model
- Tested on a balanced dataset
- Model uses key behavioral visual cues such as eye contact, gestures, and facial expressions.
- Results validated with sample test videos to demonstrate real-world applicability.
- Chatbot offer to know about the severity level