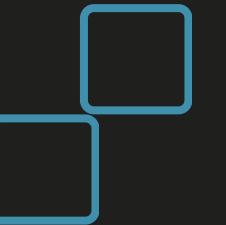




EMOTION DETECTION

AI-Systems Project



Presented By: David Geamanu

PREVIOUS TOPICS

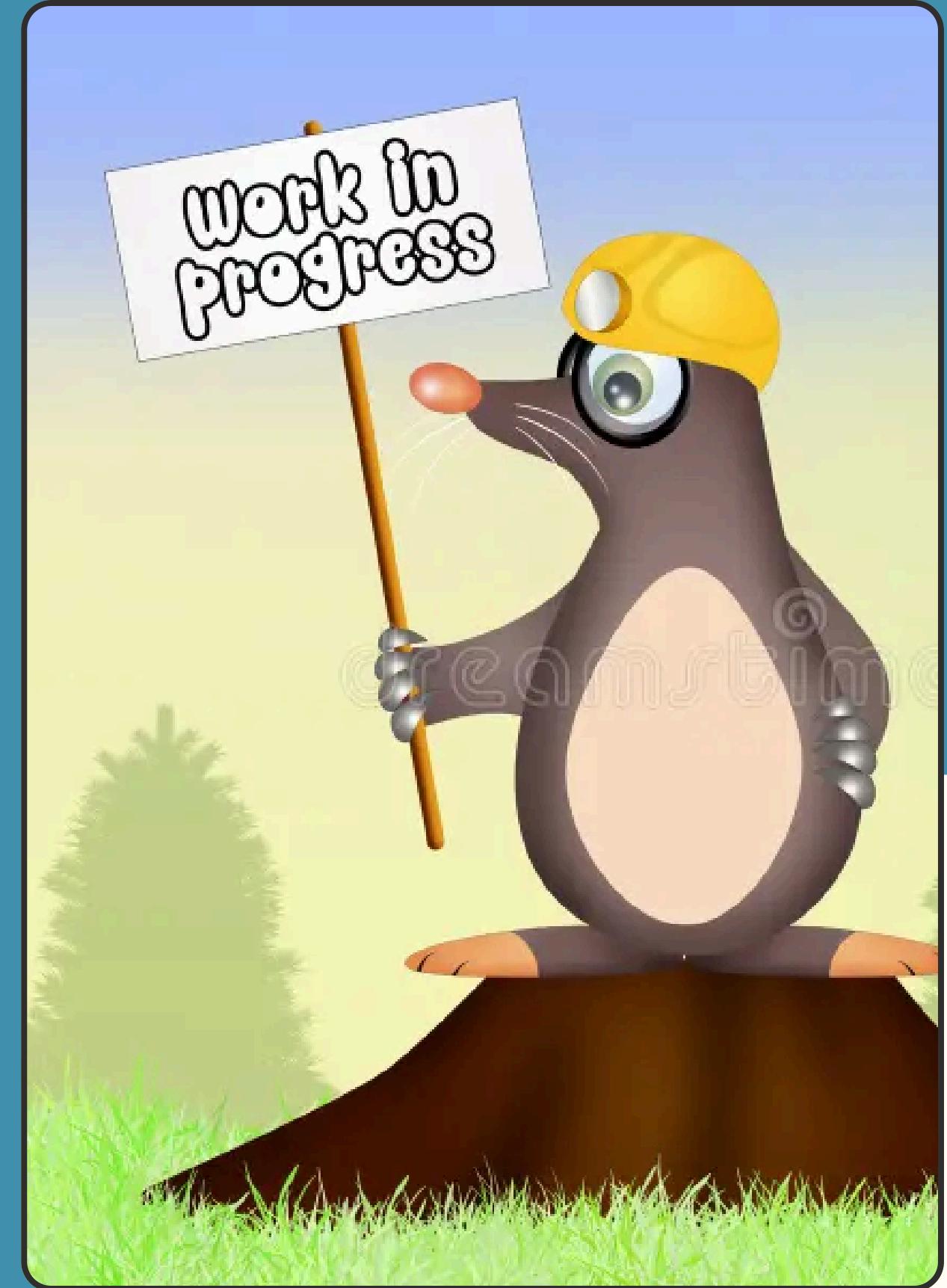
- 1 Why this project?
- 2 Project Goal
- 3 Research Focus
- 4 Datasets & Methods
- 5 Future Steps



CURRENT PROGRESS

- Researched models suitable for my needs
- Created project architecture
- Split the dataset into Train (70%)/Validation (30%)
- Working on training the model (In Progress)
- Answering one sub question (More about that in the next slides)

*



ABOUT MODEL



Keras MobileNet Model:

A lightweight Convolutional Neural Network (CNN) designed by Google for efficient image recognition. Used here with transfer learning to extract facial features and classify emotions.

Advantages:

- Fast and efficient — ideal for limited hardware
- Pretrained on ImageNet — already understands general visual features
- Fewer parameters — trains faster and avoids overfitting on small datasets
- Easily customizable — top layers can be replaced for emotion classes

DATASET

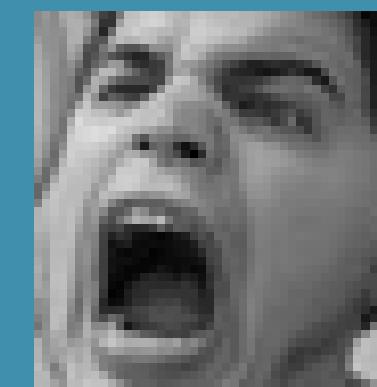
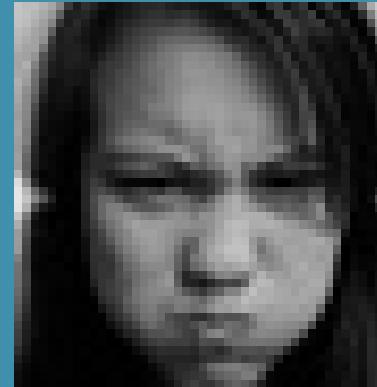
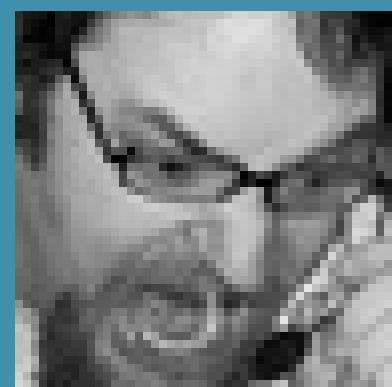
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FER2013 Dataset

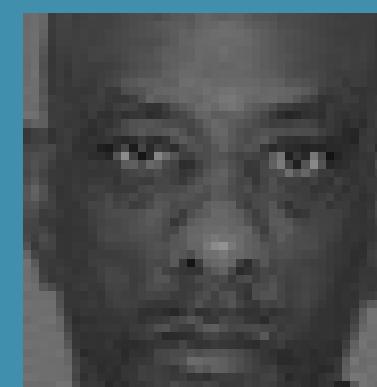
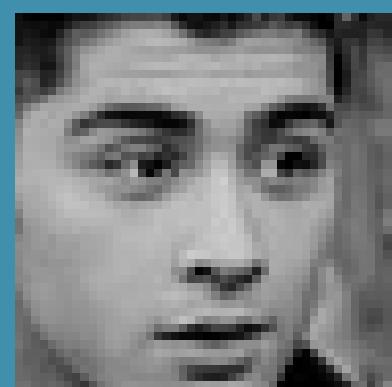
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Happy



Angry



Neutral

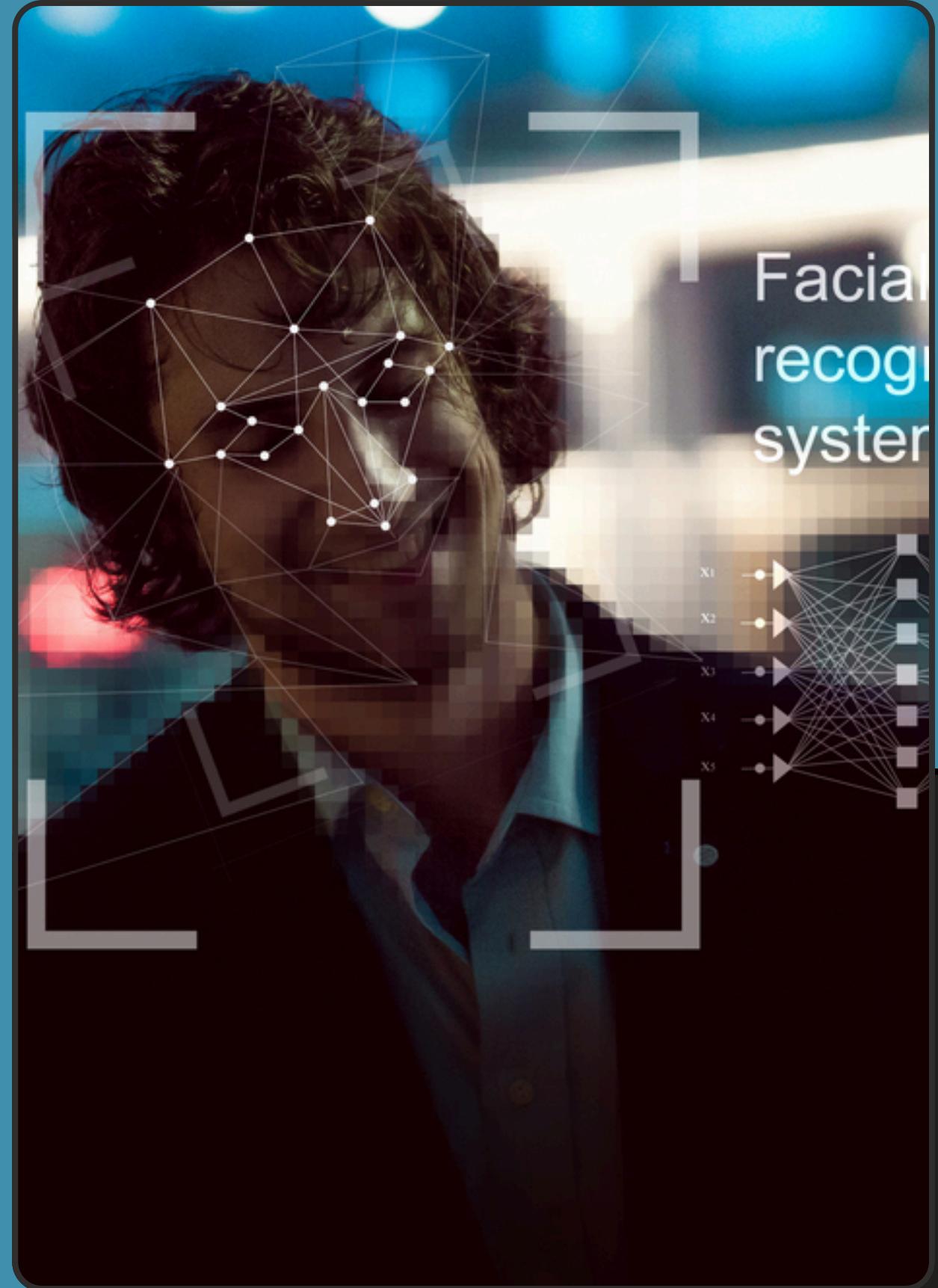
- ***6 Emotions (Currently working on 3)***
- ***Will train MobileNet model on it***
- ***Evaluate results using confusion matrices and fairness checks***
- ***Test it on my face***

PROJECT IDEA

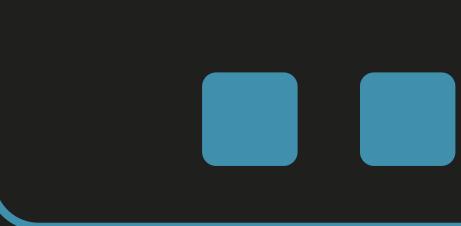
"I'm developing a desktop app that runs in the background and uses AI emotion detection through facial expressions.

You set how long you want to study, and the app monitors your mood in real time — giving motivational feedback like "keep going!" or "take a short break" based on your emotions.

It combines computer vision, machine learning, and well-being monitoring to promote smarter, healthier study habits."



Facial
recog.
syste



WHAT ETHICAL FACTORS MUST BE CONSIDERED?



ABOUT SUBQUESTION

Privacy & Data Protection

- The system processes facial data locally to avoid storing or sharing sensitive information.
- All camera input remains private, following GDPR-style principles of data minimization and security.

User Consent & Transparency

- Users must clearly agree before activating emotion detection.
- The app explains what data is captured and allows full control to enable or disable camera use.

AI Bias & Fairness

- Facial expression datasets is unbalanced, so acknowledge that this can lead to biased predictions or misclassifications



ABOUT SUBQUESTION

Data Storage & Security *

- All information is processed temporarily and not stored permanently.

Ethical Use & Context *

- The project is designed for positive and educational purposes, not surveillance or manipulation.
- It focuses on user well-being and responsible AI use.

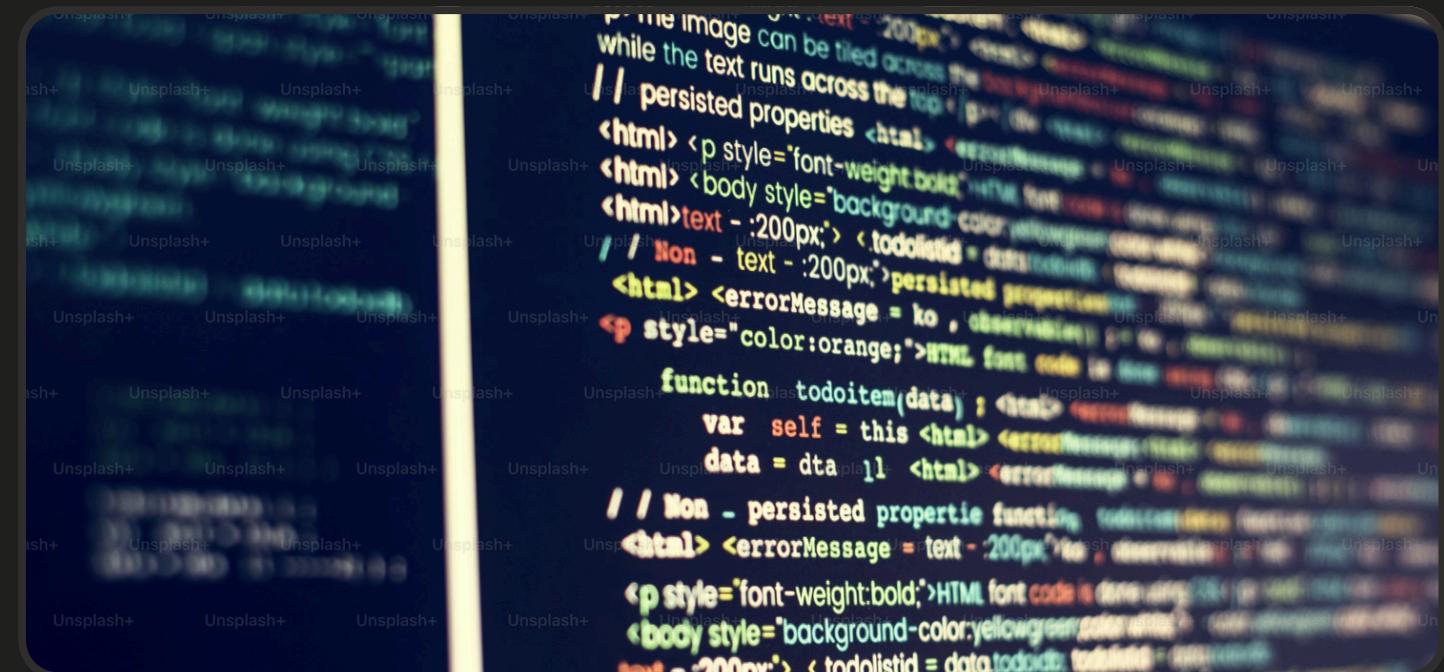
Regulatory Compliance

- The system follows ethical AI guidelines and aligns with GDPR and EU AI Act principles.
- It respects transparency, accountability, and privacy standards.



WHATS NEXT?

- *Train and Test MobileNet Model*
- *Test real-time webcam input*
- *Evaluate per-class accuracy and fairness*
- *Finish the document regarding Ai fairness*



THANK YOU!

