Problem:
Problem:

51% of Americans sleep on the job

Amerisleep Study
Problem:

- Satellite launches happen at all hours
- Employees need to stay vigilant

51% of Americans sleep on the job

70% in tech!

Amerisleep Study
Solution:
Solution:

- **Employee:** Desktop program detects drowsiness via facial recognition
Solution:

- **Employee**: Desktop program detects drowsiness via facial recognition
- **Manager**: Android app displays user profiles stored in Firebase
Overview
Overview

Interface Calibration
Overview

Interface Calibration

Drowsiness Detection
Overview

Interface Calibration

Drowsiness Detection

Firebase
Overview

- Interface Calibration
- Drowsiness Detection
- Android App
- Firebase
Demo:
Employee Workflow
Detection Technologies

OpenCV
  ● Real-time computer vision

Dlib
  ● Facial landmarks
Login and Calibration

- Log in or register
- Calibrate facial features
- User specific thresholds
How It Works

- Feature detection
- Time series analysis
- Drowsiness threshold triggers
Demo: Manager Workflow
Firebase

- Stores threshold values and blink frequency
- Notifies app of updates in real time
- Stores timestamps in UTC
Interface, Calibration

Drowsiness Detection

Android App

Firebase
Android App

- Hour/Day drowsiness graphs
- Timestamps for detections
- Manager can see employee profiles
- Real-time updates from Firebase
Future Steps

- Log in using facial recognition
- Keeping track of user even in the presence of multiple faces
- Dockerize it for easier installation
Thanks!
Questions?