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**Final Project Proposal**

**Objective:**

This project aims to use Amazon Kinesis Video Streams to ingest videos from camera devices and perform live face recognition and near real-time analysis using Amazon Rekognition Video. Amazon Kinesis Video Streams provides SDKs to securely stream video from connected devices to AWS for playback, storage, analytics, machine learning, and other processing.

We are trying to build a proof-of-concept pipeline that receives video streams from a Raspberry Pi camera device and leverages Amazon Rekognition Video to detect faces in videos.

This project will demonstrate how to use Amazon Kinesis Video Streams APIs and SDKs to stream media to AWS Cloud securely. We will identify objects in video streams using Amazon Rekognition deep learning service.

**Technologies:**

* Amazon Kinesis Video Streams
* Amazon Rekognition
* AWS Lambda
* AWS Cloud Formation
* Amazon S3
* AWS Kinesis Data Streams

**Architecture Diagram:**

A diagram of a video game

Description automatically generated with medium confidence

**Project Benefits:**

AWS Kinesis Video Streams is a powerful platform that allows us to capture, process, and store media streams for playback, analytics, and machine learning without the need to provision or manage servers. We can easily collect and transfer data to the cloud at a scale. Amazon Rekognition enables us to analyze millions of images, streaming, and stored videos within seconds, with no ML skills required and at a lower cost.

This project can be used to identify a desired object in live video streams. Here are some of the use cases:

* Create home automation experiences, such as automatically turning on the light when a person is detected or generating other actionable alerts.
* Perform facial comparison and analysis in user onboarding and authentication workflows to verify the identity of opted-in users remotely.
* Detect key video segments to reduce the time, effort, and costs of video ad insertion, content operations, and content production.
* Identify inappropriate content across image and video assets based on business-specific standards.