

Individual Contribution
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Introduction:

As a key member of the cloud computing project team, my primary responsibilities involved configuring the AWS S3 input and output buckets, creating a trigger mechanism for invoking the AWS Lambda function and updating the DynamoDB database with student academic records. These essential components contributed to the successful development and deployment of our face recognition and academic record retrieval application.

S3 Bucket Configuration:

I carefully set up the AWS S3 input and output buckets to enable seamless integration with other components of our project. The input bucket was designed to receive classroom video files in MP4 format uploaded by the user. In contrast, the output bucket was designated to store the results of the face recognition process in the form of CSV files.

Lambda Trigger Mechanism:

An essential part of my contribution was designing and implementing a trigger mechanism that would invoke the AWS Lambda function whenever a user uploads a video file to the input bucket. This trigger allowed our application to respond immediately to user actions, initiating the face recognition and academic record retrieval processes without delay.

DynamoDB Database Update:

To store and manage student academic records, I integrated the DynamoDB database into our application. I created a Python script (Dynamo.py) that imports student records from a JSON file (student_data.json) and uploads them to the DynamoDB table. This script also reformats the data, ensuring that it is stored in the appropriate format for our application.

Lambda Permissions:

To facilitate secure and efficient communication between the AWS Lambda function and the DynamoDB database, I set up the necessary permissions. These permissions allow the Lambda function to fetch student academic records from the DynamoDB database when processing the video files uploaded to the input bucket.

Conclusion:

My contributions to the cloud-based face recognition and academic record retrieval project have been critical in ensuring the seamless integration of various components, enabling the application to function efficiently and securely. By configuring the AWS S3 buckets, implementing the Lambda trigger mechanism, updating the DynamoDB database, and setting up the required permissions, I have played a significant role in the development and deployment of our innovative solution for educators.