



Case Study

AI-ENHANCED VIDEO TRANSCRIPTION AND ENRICHMENT PIPELINE FOR ARIVIHAN

At a Glance

Arivihan, an EdTech platform, partnered with AWS to build a scalable video transcription and enrichment pipeline. The new architecture automated transcription, improved accuracy for academic content and delivered secure, low-latency video access to students across India.

Outcomes

- Reduced transcription turnaround time from days to hours.
- Improved transcription accuracy by 30% with hybrid AI models.
- Cut video latency by 40% during peak exam seasons.
- Optimized storage and processing costs by 25–40%.
- Enhanced student engagement through contextual tagging and insights.

The Client

Arivihan is an EdTech platform that serves thousands of JEE and NEET aspirants. With thousands hours of recorded lectures and a growing student base, the company aims to deliver accessible, high-quality education across India, including Tier-2 and Tier-3 cities.

The Challenge

As Arivihan's content library expanded, manual transcription became slow, resource-heavy and prone to errors, especially when handling technical terms. Students often faced delays in receiving transcripts, limiting their exam preparation.

At the same time, platform usage spiked sharply during exam seasons. This cause performance bottlenecks in video delivery. Ensuring secure, low-latency access to verified students while protecting sensitive user data presented additional hurdles.

The Solution

To overcome these challenges, Arivihan partnered with AWS to deploy a modern, cloud-native, AI-driven video content pipeline.

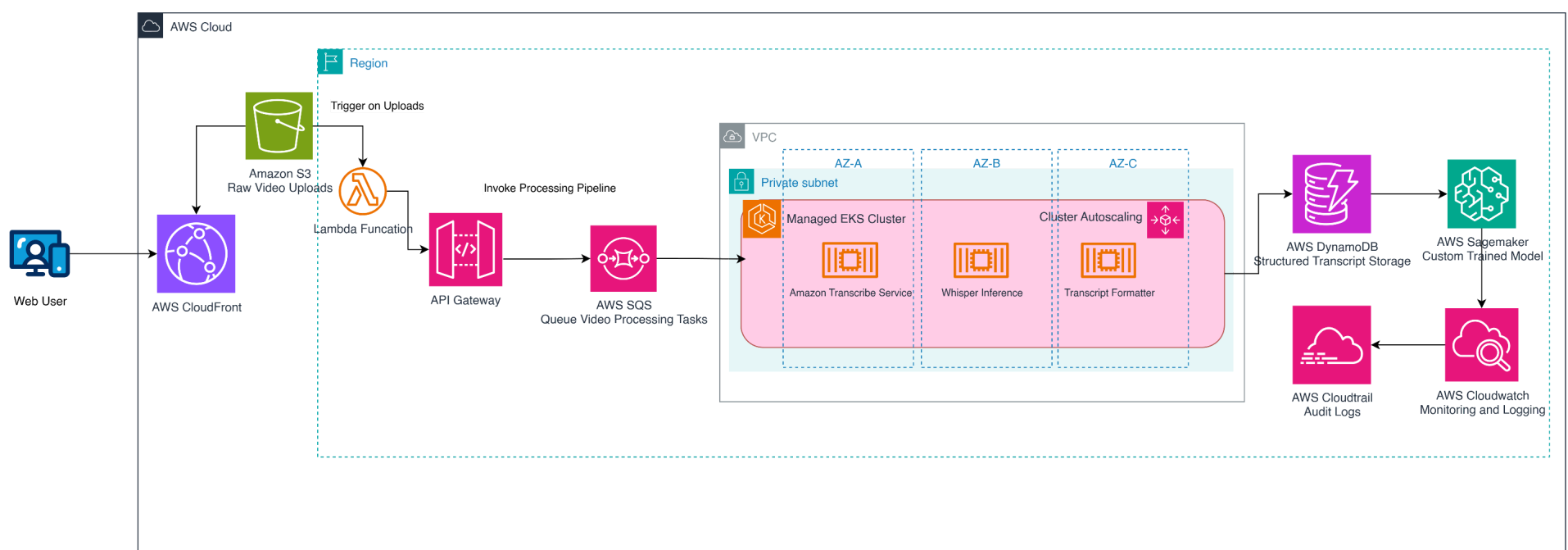
Raw videos are uploaded to Amazon S3, the central repository and distributed globally via Amazon CloudFront with signed URLs to enforce secure access. The processing pipeline is fully event-driven using Amazon SQS and AWS Lambda, ensuring automation from ingestion to delivery.

For transcription, a hybrid approach was designed. Amazon Transcribe delivers rapid baseline transcriptions, while domain-specific accuracy is improved with Whisper inference running on Amazon EKS. The enriched transcripts are stored in Amazon DynamoDB for low-latency search and retrieval.

Amazon SageMaker enhances transcripts with contextual tagging, highlights and learning insights that integrate with the learning platform. Meanwhile, Amazon CloudWatch and AWS CloudTrail provide monitoring, compliance and governance.

The architecture scales dynamically with demand, using Spot Instances for GPU-based Whisper workloads and S3 lifecycle policies for cost optimization.

Architectural Diagram

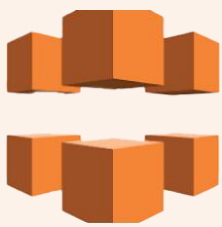


Results and Benefits

- **Faster Content Availability:** Transcripts generated within hours instead of days
- **Higher Accuracy:** 30% improvement in handling academic and multilingual terms
- **Seamless Student Experience:** 40% reduction in video latency during high demand
- **Cost Optimization:**
 1. 25% lower storage costs with S3 lifecycle policies
 2. 40% savings on inference using Spot Instances

- **Scalability:** Elastic architecture adapts to seasonal exam traffic
- **Security & Compliance:** IAM, encryption and CloudFront edge protection safeguard sensitive data

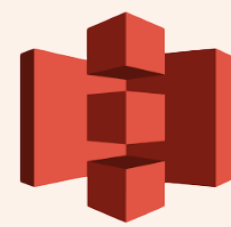
AWS Services Used



Amazon
CloudFront



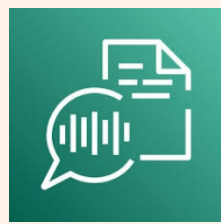
AWS
Lambda@Edge



Amazon S3



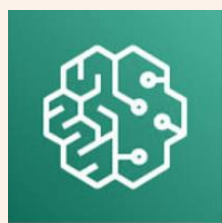
Amazon
EKS



Amazon
Transcribe



Amazon
DynamoDB



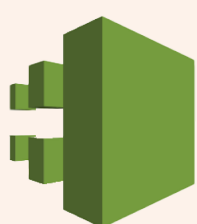
Amazon
SageMaker



Amazon SQS



Amazon
CloudWatch



AWS
CloudTrail

Conclusion

By leveraging AWS, Arivihan built a secure and automated video platform that scales seamlessly with student demand. The hybrid transcription pipeline ensures academic accuracy, while SageMaker-powered enrichment enhances engagement. With improved performance, reduced costs and robust compliance, Arivihan is now better positioned to deliver accessible, high-quality digital education across India.

About Us



Years of Exp

15+



Data Center

10+



Awards

100+

AceCloud is a leading provider of end-to-end cloud computing solutions to global organizations across industries at scale. It offers a full spectrum of cloud services, including Public Cloud, Application Hosting, AWS Services, Managed Security Services, and Hosted Virtual Desktop Solutions.

AceCloud is a brand of Real Time Data Services (RTDS) group of companies – a leading provider of information technology capabilities specializing in Cloud Computing and Cloud Telephony. RTDS Group has an employee base of 600+ across India, the US, and the UK, supporting over 20,000+ customers and IT infrastructure in 10+ data centers spanning the globe. It offers industry-leading technological solutions that help customers streamline their operations and enhance efficiency.

As an advanced consulting and certified AWS Well-Architected Partner, AceCloud recently achieved the prestigious AWS Storage Competency and is also recognized as an Amazon RDS Service Delivery Partner. These achievements underscore its deep expertise in AWS technologies and commitment to delivering high-quality cloud solutions.



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