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GAIA-Generative AI for Automated Assessment in Education (AWS Cloud Deployment)	Gagan Narra Chowdary Akshara Reddy Arrabolu Poornarakesh Anagani	Guan Yue Hong, Western Michigan University	CS-6030-120 Generative AI	10/20/2025

## GAIA-Generative AI for Automated Assessment in Education (AWS Cloud Deployment)

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## CS-6030-120 - Generative AI

### Project Category

Application Project

### Project Choice

#### **GAIA : Generative AI for Automated Assessment in Education (AWS Cloud Deployment)**

### Project Overview

GAIA is a cloud-based AI application that automates grading and feedback for student assignments. The platform streamlines assessment by enabling teachers to upload assignments and rubrics; students can submit answers and receive instant, personalized feedback. Using generative AI, GAIA improves grading speed, accuracy, and fairness—all hosted on AWS for scalability and reliability.

### Project Objective

- Build a demo-ready web system to automate grading and feedback using AI
- Reduce grading workload and turnaround time for teachers
- Provide consistent, unbiased feedback to students
- Deliver analytics dashboards for educators

### Motivation

This project is motivated by the need to address educator workload, delayed feedback cycles, and biases in assessment. By integrating generative AI, GAIA promotes equitable, efficient, and data-driven educational processes.

### Conclusion

GAIA demonstrates the practical value of combining generative AI and cloud services to modernize educational assessment. The project delivers an MVP hosted on AWS within a month, focusing on core features and future scalability.

### Tools & TechStack

S.no	Category	Purpose & Components
1	Cloud Environment	AWS Lambda, API Gateway, S3, RDS, Cognito, CloudWatch
2	Backend	Python, Fast API, Boto3, OpenAI SDK
3	Frontend	React.js, Material-UI, AWS Amplify UI
4	DevOps/CI/CD	GitHub, GitHub Actions or Jenkins AWS SAM
5	Monitoring	CloudWatch