CLOUD COMPUTING

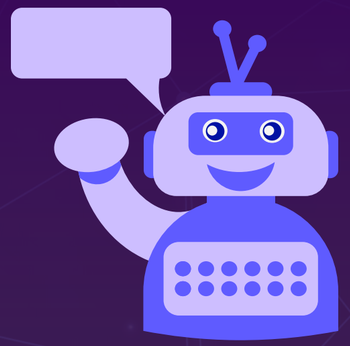
MINI PROJECT

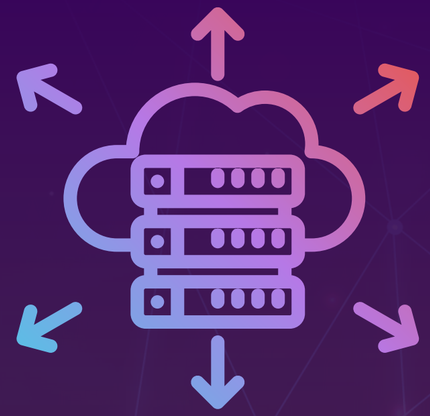
PRESENTED BY

ANANYA SACHAN: 22070126010
APARNA IYER: 22070126017
HEVARDHAN S.: 22070126046
RIYA SHUKLA: 22070126090

INTRODUCTION

The project is centered around building a scalable and resilient infrastructure for hosting a web application on AWS. By leveraging cloud-native concepts such as EC2 Auto Scaling, Elastic Load Balancing, and EC2 instances, the setup aims to maintain consistent performance under fluctuating traffic conditions.

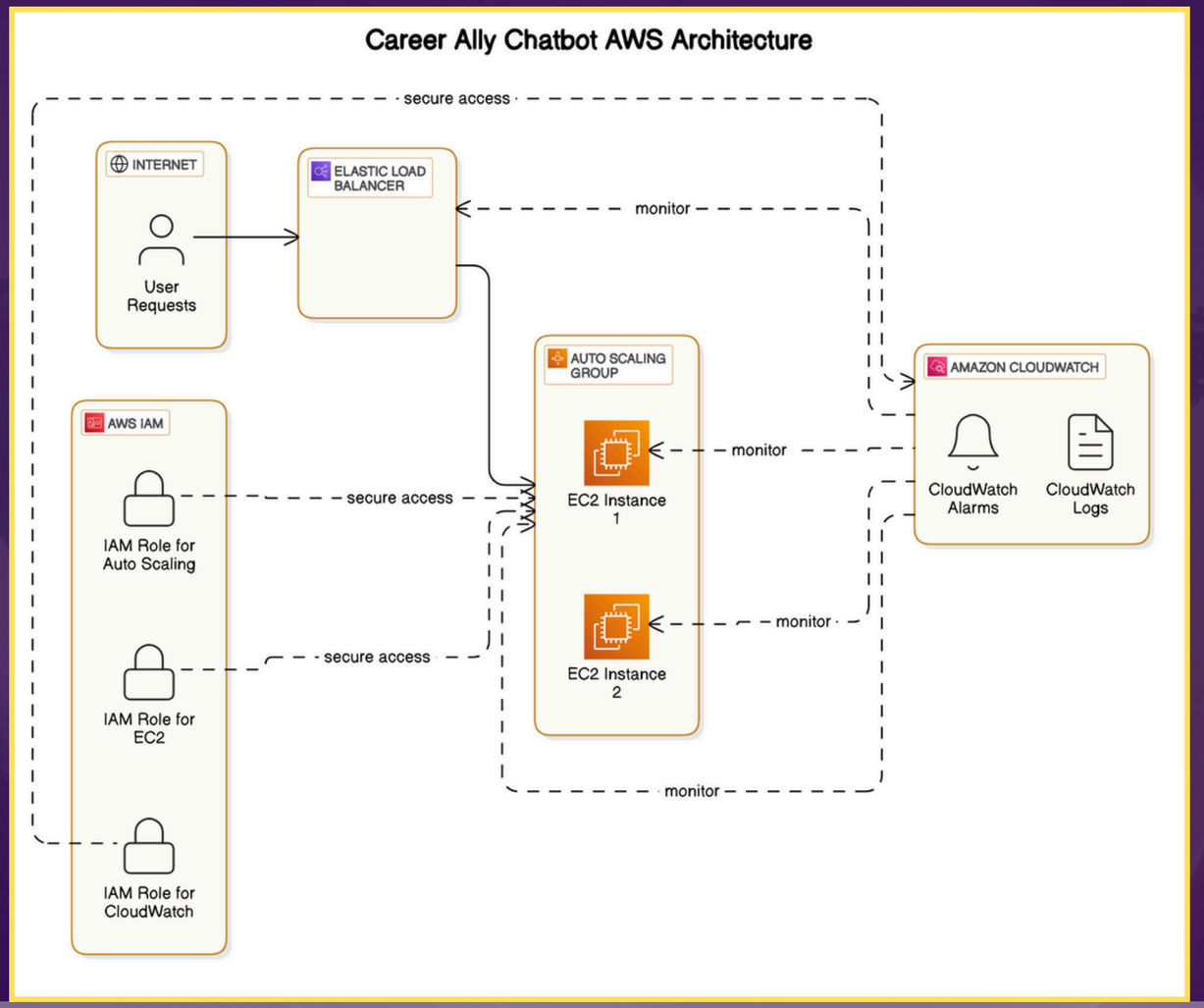




PROBLEM STATEMENT

The goal of this project is to design and implement a scalable, resilient, and highly available infrastructure on Amazon Web Services (AWS) to host a web application. As the traffic to the application fluctuates over time, it is crucial to ensure that the infrastructure can dynamically scale to handle both peak loads and periods of low demand without compromising performance, reliability, or cost-efficiency.

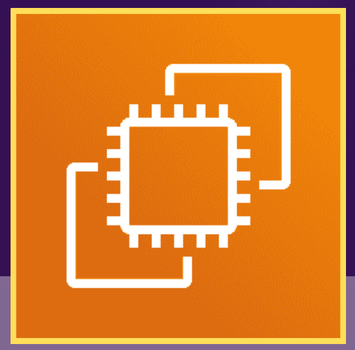
ARCHITECTURE



AWS SERVICES USED

EC2 INSTANCES

Provides resizable virtual machines (VMs) (instances) for computing needs. Used to run the application software for Career Ally.



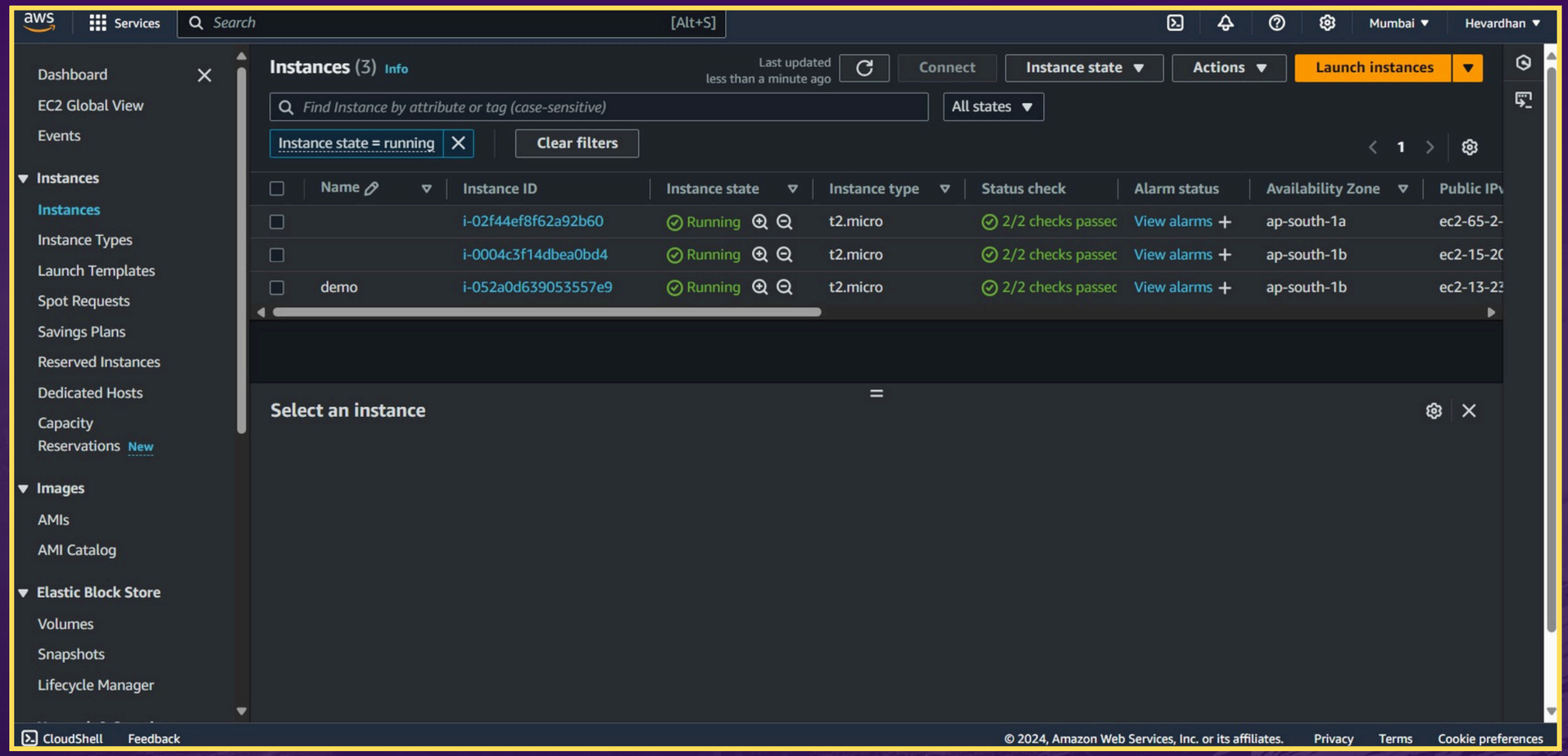
AUTOSCALING GROUP

To automatically adjust the number of EC2 instances in response to traffic demand, keeping the application available and cost-effective.

ELASTIC LOAD BALANCING

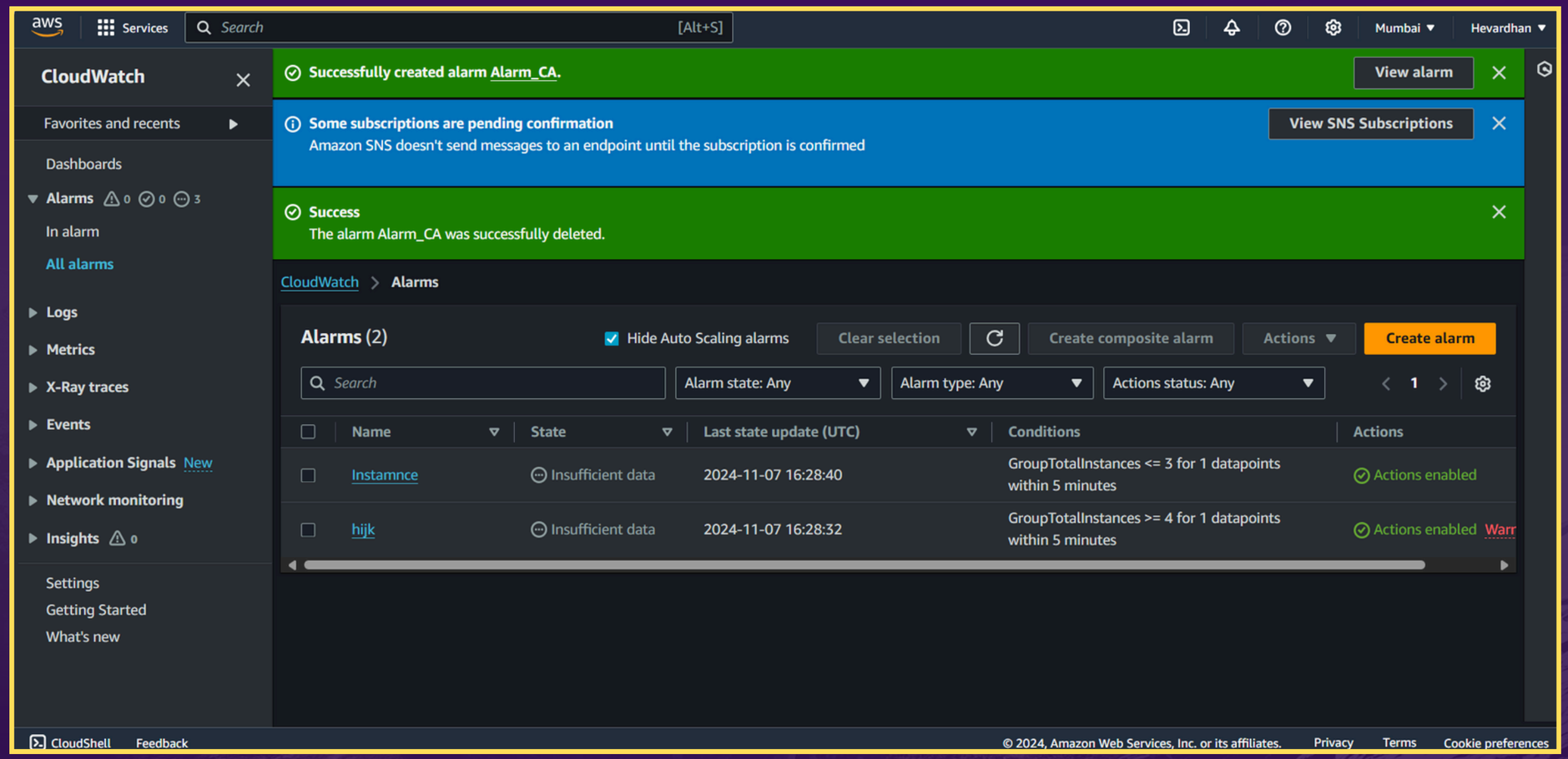
To distribute incoming traffic across multiple EC2 instances or in one or more availability zones, enhancing fault tolerance and load distribution.

IMPLEMENTATION



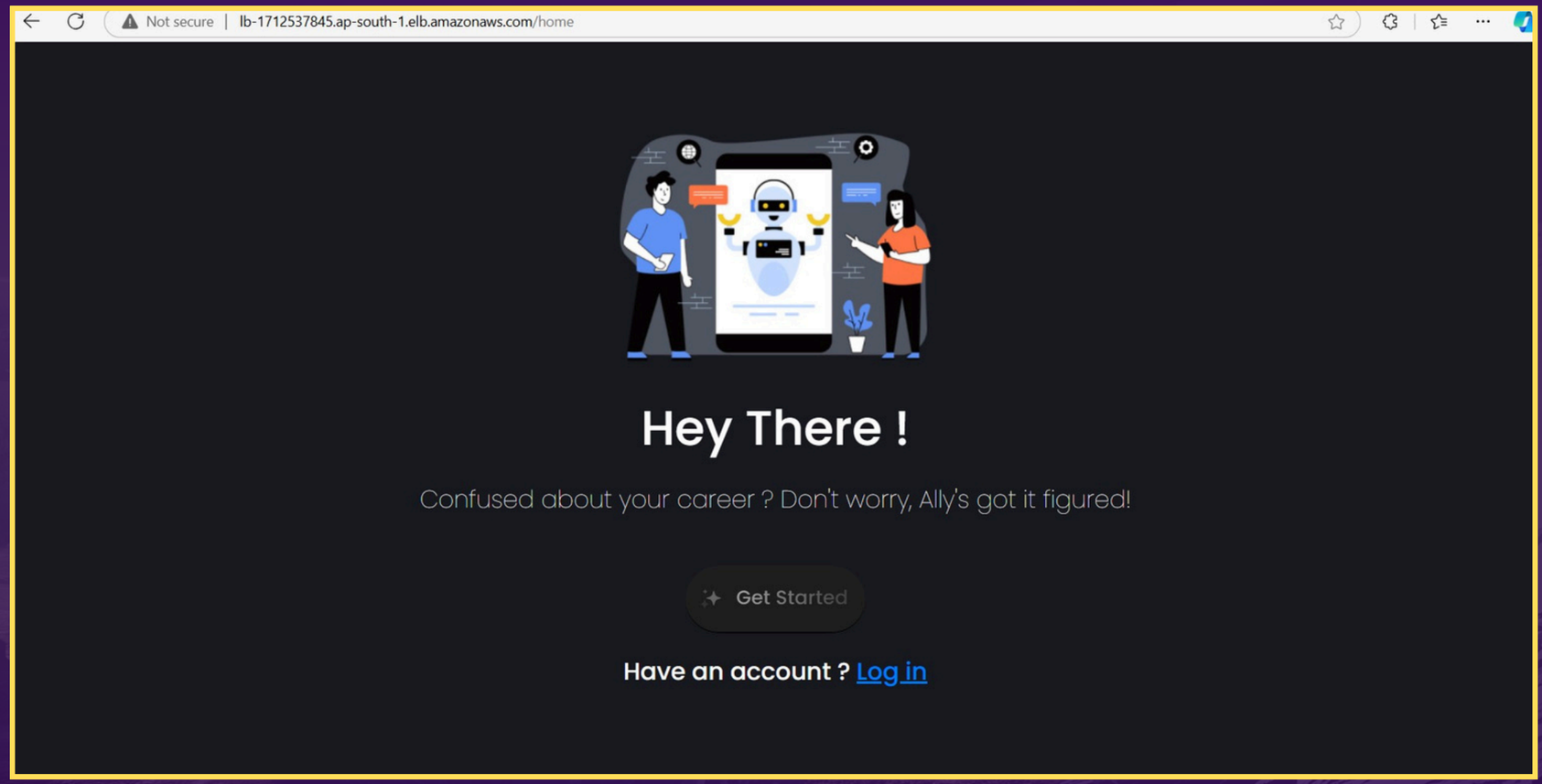
EC2 Instances

IMPLEMENTATION



Alarms under CloudWatch

IMPLEMENTATION



Career Ally Landing Page

CONCLUSION

This project successfully deployed a scalable, reliable web application on AWS, using EC2 instances, Auto Scaling, and Elastic Load Balancing to handle variable traffic loads efficiently. The use of IAM provided robust access control, ensuring secure interactions with cloud resources. AWS's flexible infrastructure allowed us to optimize resource usage, balancing performance with cost-effectiveness.

Overall, this project demonstrates the advantages of AWS for building resilient applications and provides a strong foundation for future enhancements.

THANK YOU!