

CS470 Final Reflection

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CS-470-R3377 Full Stack Development II 24EW3

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YouTube URL: <https://youtu.be/cNw54HZNiOk>

# **Experiences and Strengths**

## **Professional Goals**

CS 470 provided a great hands-on experience that bridged the gap between my academic understanding and the practical applications involved in cloud computing, further exploration of full stack development, API integration along with containerization. Cloud computing and other services are an integral part of the tech industry and landscape that the knowledge gained was invaluable.

## **Skills Learned and Developed**

Throughout CS 470, I've honed a variety of technical and soft skills, including:

- Containerization with Docker and Docker Compose: Mastering these tools has enabled me to package applications efficiently, ensuring consistency across different environments.
- Serverless Computing with AWS Lambda and API Gateway: This has been a focal point of my learning, providing me with practical experience in deploying scalable, cost-efficient applications without the overhead of managing servers.
- Database Management with AWS DynamoDB: Utilizing DynamoDB has enhanced my skills in handling NoSQL databases, emphasizing scalability and performance.

## **Strengths as a Software Developer**

- Adaptability to new technologies, enabling rapid upskilling in cloud-native development tools and practices.
- Capability to simplify complex concepts, as demonstrated in my presentation, ensuring understandability across diverse audiences.
- Problem-solving skills, particularly in debugging and optimizing cloud-based applications for performance and cost efficiency.

## **Prepared Roles**

The skills and experiences acquired from this course have prepared me for roles such as:

- Cloud Developer, focusing on serverless application development.
- DevOps Engineer, specializing in continuous integration and continuous deployment (CI/CD) pipelines for cloud-native applications.

# **Planning for Growth**

## **Knowledge on Cloud Services**

My understanding of cloud services has expanded beyond theoretical concepts to include practical, hands-on experience. This comprehensive knowledge base is crucial for the scalable, efficient, and secure deployment of web applications in the cloud.

## **Microservices and Serverless for Efficiency**

For future growth, I envision leveraging microservices to break down the application into smaller, manageable pieces that can be developed, deployed, and scaled independently. This approach enhances the application's scalability and facilitates easier updates and maintenance.

Serverless computing, particularly AWS Lambda, presents an attractive option for managing peak loads and reducing costs, as it eliminates the need to provide or manage servers and scales automatically. Implementing auto-scaling policies and utilizing cloud monitoring tools for real-time error detection and automated recovery strategies. Serverless offers a more predictable cost model for specific use cases, as costs directly correlate with execution and resource consumption, whereas containers might incur costs for reserved capacity.

## **Pros and Cons for Expansion**

- Microservices Pros: Increased agility, easier bug isolation, and scalability.
- Microservices Cons: Complexity in managing multiple services and inter-service communication.
- Serverless Pros: Cost-efficiency for fluctuating workloads, no server management, and automatic scaling.
- Serverless Cons: Potential for increased latency in cold starts, limitations in runtime environment customization.

## **Elasticity and Pay-for-Service in Decision Making**

- Elasticity ensures that the application can handle varying loads efficiently, crucial for maintaining performance during demand spikes.
- The pay-for-service model is central to planning for future growth, as it allows for precise budgeting based on actual usage, ensuring financial resources are optimally allocated.