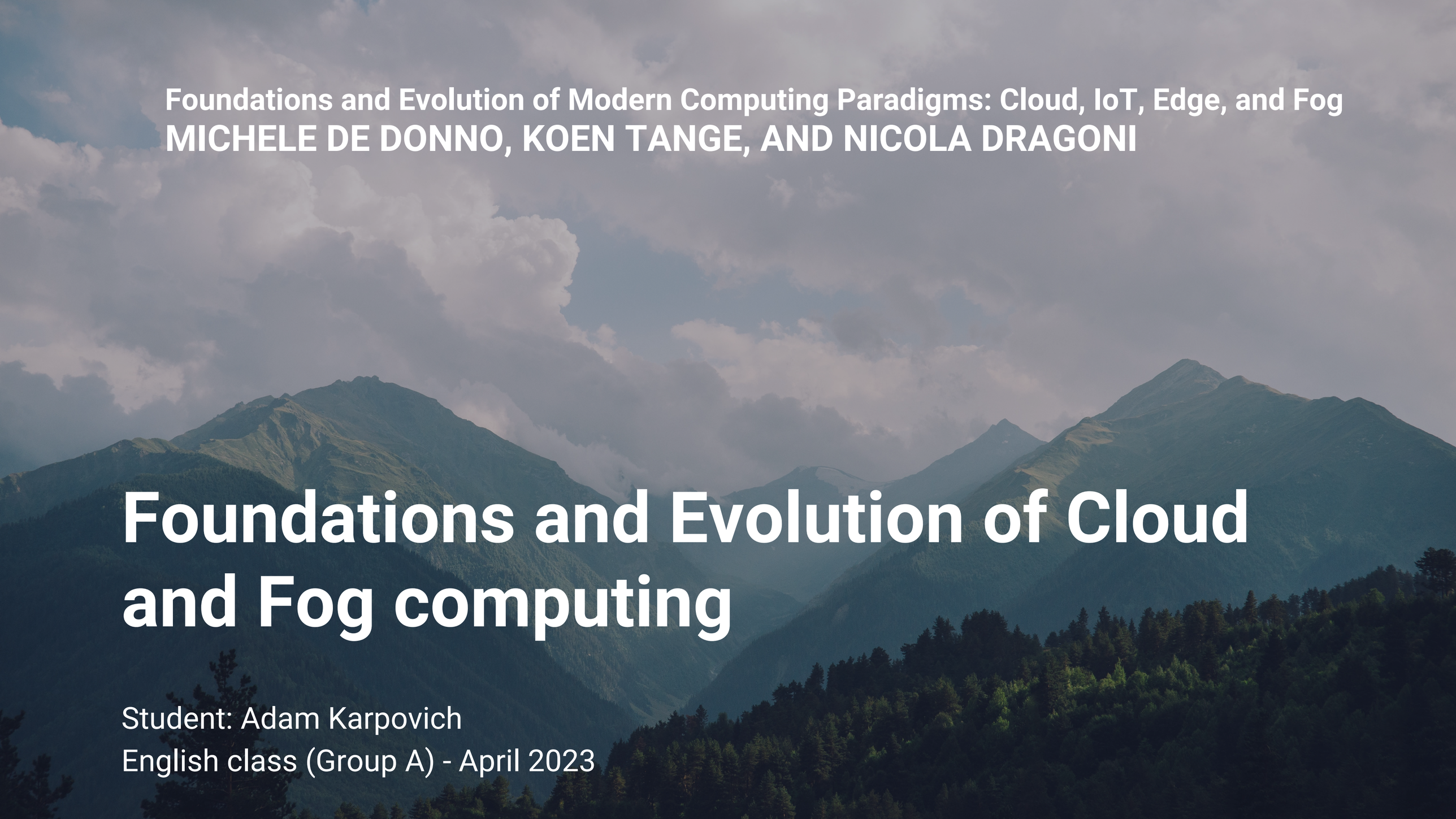

Foundations and Evolution of Modern Computing Paradigms: Cloud, IoT, Edge, and Fog

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Foundations and Evolution of Cloud and Fog computing

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What is Cloud and Fog computing?

Cloud and Fog computing - the usage of IT resources over the Internet.
Instead of buying, owning, and maintaining physical computers, you can access and use storage and other services from cloud providers, at a much cheaper cost.
In simple words:

Cloud computing is when cloud providers are renting the user their own computing power over the internet instead of a user buying and maintaining physical machines.

Fog computing, on the other hand, is a newer concept that takes cloud computing one step further by leveraging edge devices and networks to process and store data locally.
In other words, fog computing allows organizations to bring the computing power closer to where it's needed.

Research question:

What are the key factors that have driven the evolution of cloud and fog computing, and how have these factors shaped the development of the technology over time?

Hypothesis:

- Many large tech companies have realized that they were wasting a lot of money on physical computers that they were not even using.
- They bought them out of fear that they might not have enough of resources, resulting in a lot of wasted money.
- As a solution, big companies like AWS, Microsoft, and Google started offering virtual storage and computing power for rent to other businesses.
- Today, this has become a significant paradigm in the tech world.

Evolution of cloud computing

The cloud has grown exponentially over the years and is predicted to continue this trend in the coming years. Cloud computing represents a fundamental shift in the way that data is used and managed. Today, organizations have the ability to utilize cloud computing services to access a variety of resources and applications as needed instead of relaying on in-house hardware and software.

Evolution of cloud computing

Cloud computing allows organizations to save time and money, get quick access to computing resources, take advantage of flexible storage options, and reduce their carbon footprint. By leveraging cloud technology, organizations can focus their resources on core business objectives instead of managing hardware and software.

Results

The increasing demand for data storage and processing capabilities has been a major driver of the evolution of cloud computing.

Technological advancements have played a significant role in shaping the development of cloud computing, particularly in the areas of virtualization and automation.

Results

The increasing trend of digitalization has played a significant role in the expansion of cloud computing.

As the internet continues to gain popularity, and data generation increases exponentially, the demand for cloud computing services has skyrocketed.

As a result, cloud computing has now become an indispensable technology for companies across multiple industries.

Conclusion

• This paper explains advanced computing paradigms like Internet of Things, Cloud computing, Edge computing, and Fog computing in a clear way.

• It also shows how Fog computing is important for connecting these paradigms.

• This paper is helpful for beginners who want to learn about Edge and Fog computing and how they relate to each other.

• It also talks about future research and challenges in this field.

Discussion

Have you ever heard about cloud or fog computing?

Can you imagine a future without IoT technologies?

How do you think people in the early 2000s reacted to the idea of cloud computing?

Bibliography:

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