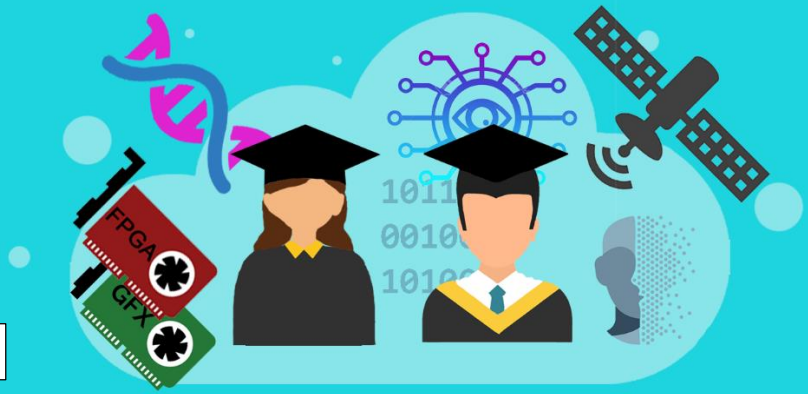


Diploma Thesis

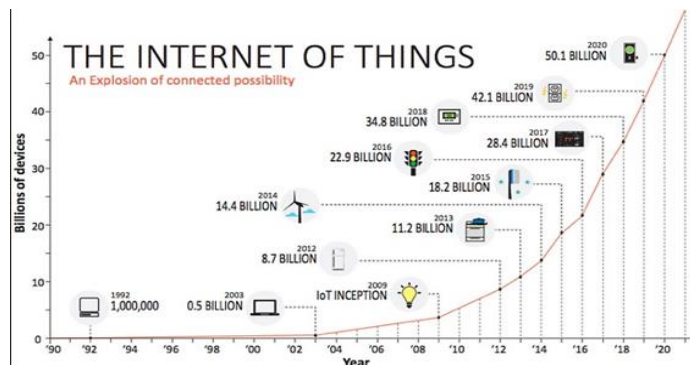
Microprocessors and
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From Edge to Cloud: Dynamic Workload Placement on Edge - Cloud Platforms

In the past several years, there has been an increased usage of smart, always-connected devices which provide **real-time** contextual **information** with low overhead to optimize processes and improve how companies and individuals interact, work, and live. This growth in **IoT** is already contributing to an escalating explosion in data generated at the periphery of communication networks. Since the network resources are limited, a cloud-based computation approach seems not able to address the strict latency requirements for the whole bulk of data produced.



In this thesis, we will investigate several cloud paradigms such as **microservices**, **containerization** and **serverless** computing which provide solutions for interconnecting the nodes and deploying software across a cluster. Then we will design a model and implement a solution that addresses the aforementioned problem.

Keywords:

IoT, Edge Computing, Cloud computing, Serverless, Resource management

Prerequisites: Linux, Bash/Shell scripting, eager to learn new things, System design thinking

Knowledge & Experience the student will acquire:

- Research experience on state-of-the-art topics
- A broader understanding on cloud-edge systems design
- Use and configure trending technologies and frameworks (Kubernetes, Serverless, Docker, Edge Computing)

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