## Cloud Computing: Serverless Functions

Aside from the “classical” cloud computing models, Infrastructure, Platform and Software as a Service, the more specialized Serverless Computing has gained a lot of attention recently. This work will provide an introduction into this new concept, compare it with the more classical clout computing models and point out potential benefits and downsides possibly based on a concrete example.

* Introduce Functions as a Service, discuss the central differences towards classical approaches like IaaS/PaaS
* Investigate current approaches of this technology in the Cloud Computing area
* Provide a sample setup that shows the benefits (and downsides).
* Starting Points:
  + <https://www.openfaas.com/>

**Supervisor: Marc Schaaf, marc.schaaf@fhnw.ch**

Please Note: Most of the supervision will take place via phone or similar

## Introduction into Service Meshes

Service meshes can be seen as an infrastructure layer for micro service based applications specifically fit for cloud computing environments. It is the goal to introduce the concept of service meshes and its use for micro services with a focus on the open source service mesh “Istio”.

* Give an introduction into the service mesh concept and its relation to micro services
* Give an overview of features provided by Istio as relevant to the above concept
* Provide a small sample setup that demonstrates core features
* Starting Points:
  + <https://istio.io/>
  + https://object-storage-ca-ymq-1.vexxhost.net/swift/v1/6e4619c416ff4bd19e1c087f27a43eea/www-assets-prod/summits/26/presentations/23052/slides/Open-Infrastructure-Summit-Denver-Service-Mesh-Comparisons.pdf

**Supervisor: Marc Schaaf, marc.schaaf@fhnw.ch**

Please Note: Most of the supervision will take place via phone or similar

## Open Source Systems for "Big Data" Processing

Various Open Source projects exist nowadays which are aimed at or usable for Big Data storage and analytics. This work will give an overview of the existing projects focused on open source based projects and their capabilities for Big Data Processing.

* Create an overview of the projects in this area
  + Starting Point: Apache Hadoop and sub-projects
* Device a categorization scheme and categorize the systems
* Provide a typical use case for each category to illustrate the differences

**Supervisor: Marc Schaaf, marc.schaaf@fhnw.ch**

Please Note: Most of the supervision will take place via phone or similar