Microservices and Cloud Computing – Midterm 2 - Study Guide

- *Cloud computing concepts*
- *Virtual Machines, Hypervisors*
- *Containerization*
- *Docker, Docker Compose*
- *Kubernetes*
- Modeling microservices
    - Ports and adaptors architecture
    - Service oriented architecture
    - Key concepts of microservices
    - Domain driven design
- Refactoring applications into microservices
    - When and when not to refactor
    - Strangler pattern
    - Defining service boundaries
- Microservice Communication Styles
    - Types of communication
    - Asynchronous versus synchronous
    - Appropriate use cases
    - Performance
    - REST
- Distributed Data Platforms
    - CAP Theorem
    - Data Platforms
    - Spark
- Scalable machine learning concepts
    - Data scalability
    - Model scalability
    - Inference, training
- Event streaming
    - Producers, consumers, brokers
    - Scalability and fault tolerance
    - Kafka design principles