New opportunities and challenges in mobile applications
Adjunct Professor
ECTS credits: 4

The "New opportunities and challenges in mobile applications" course aims at giving a global view on technologies and systems behind Mobile Applications. Students will learn current service control paradigms, the evolution of networked service infrastructures (e.g., 3G/4G networks, IMS and LTE; cloud computing à la Google/Amazon; P2P), future services (e.g., augmented reality), how services can be developed (e.g., Mashup) and the software structure of terminals (e.g., Iphone).

- **Services and Control Paradigms**
  - Client-server, network intelligence, peer to peer and other models (tuple space)
- **Evolution of Service Control Models**
  - Intelligent Networks (IN), IP Multimedia Subsystem (IMS), Open Service Access (OSA)
  - From Web Servers to big Data Centers (the Google model), Service Oriented Architecture SOA, cloud computing and the XaaS model, the Amazon implementation
  - Peer to peer, grid computing, gossiping protocols
- **How to develop Mobile Services/Applications**
  - APIs, Mashup, Widgets and Software Development Environments
  - Service development in highly distributed systems
- **Classes of Services**
  - Web 2.0 services and Social Networks
  - Telecomm services evolution (multimedia, Internet access, voice services (e.g., VoIP), ...)
  - Immersive services (wireless sensor nets, context awareness, ambient intelligence)
  - New opportunities: Augmented Reality, Social Media, Internet of Things
- **Services and Mobile Terminals**
  - Operating systems (e.g., Android), Service Model (e.g., iPhone's Application Store)
- **Future evolution of service control**
  - Self-organizing and autonomic platforms
  - New Service ecosystems