In recent years, driven by the demands of innovative applications and services, a number of new technologies for networked and distributed systems have emerged. For example, in the Internet of Things, a large number of devices and everyday objects are equipped with sensors and actuators and networked with the help of communication technologies. A crucial requirement, in these networked and distributed systems, is the reduction of end-to-end latency, e.g., by using edge and fog computing resources in addition to remote cloud computing resources, or by using optimized communication protocols.

Another trend is to increase the flexibility and efficiency of distributed systems through virtualization and software-defined systems that allow for flexible customization and dynamic scaling.

Further, driven by the popularity of the Bitcoin system, various distributed ledger technologies and advanced concepts such as Smart Contracts have been developed that not only serve as the basis of electronic currencies, but also generally support applications in which consensus between different parties must be achieved and documented.

Looking at the current evolution of the Internet, further questions are raised, for instance: Should we continue addressing end systems using IP addresses, or should we rather address content and information (information centric networking)? How to optimize the transfer of web content? Moreover, what about the privacy aspects of networked systems?

In this seminar, we will discuss current trends in communication networks and modern networking technologies that tackle the above (and more) challenges and questions, for instance:

- Software-defined Networking (SDN) and Network Function Virtualization (NFV)
- Edge, Fog, and Cloud Computing
- Communication Middleware
- Information-centric Networking
- Distributed Ledger, Blockchain, Smart Contracts

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**Further Information** will be made available through Ilias and the course website: [https://goo.gl/A3qXnH](https://goo.gl/A3qXnH)