# **Bridging Internet of Things and Paleontology: Current Benefits and Future Prospects**

The evolution of microelectronics and communication technologies brought to life the concept of the Internet of Things (IoT): digital space beyond traditional computers, when everyday “things” like teapots, fridges and lamps become “smart” and thereby can act as small computation modules. They communicate with each other, monitor the environment, process the data and even make decisions about their functioning. IoT rapidly grows, spawning different branches like Smart Home (for home automation), Smart City (for massive outdoor town automation), Industry 4.0 (for industrial automation) and **Smart Museum**.

Smart Museum denotes the set of technologies for making the contents of museums more safe yet interactive and thereby more attractive for visitors. For this, the capabilities of modern microelectronics are involved.

Paleontological museums have a great potential of interactivity. IoT can help to reconstruct an immersive environment, where the visitor can be an actor, not a passive viewer. This, in turn, makes the the exhibition memorable, increases the museum’s replayability and in general fosters the popularization of paleontology.

The lecture gives an overview of the IoT technologies within a remit of Smart Paleontological Museum implementation. The theoretical part highlights the following key topics:

1. Core ideas behind the IoT: what is IoT and what is that for.
2. IoT device anatomy: what makes “things” smart.
3. Introduction to the sensor networks: how do “things” look around.
4. Introduction to hardware programming: how can we tell the “things”, what to do.
5. Bridging IoT and Paleontology: how can paleontologist benefit from this.
6. Steps towards Smart Paleontological Museum: use-cases of IoT-powered paleontological exhibits.
7. Distinctiveness of IoT in the museum: comparison with traditional multimedia.
8. Future horizons: what do we expect next.

The practical part encourages students to come up with the IoT-powered exhibit that corresponds to their research topic and practice their skills by building their own very first IoT device.