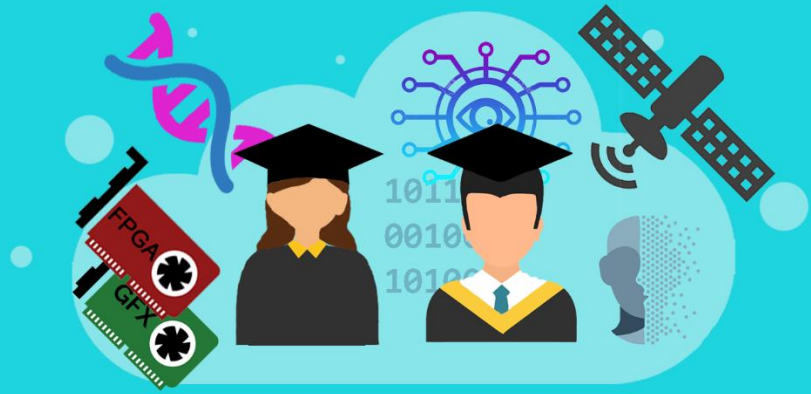


Diploma Thesis

Microprocessors and
Digital Systems
Laboratory



Drone-based acceleration of Internet-of-Video-Things (IoVT)

Among different kinds of sensors in IoT era, visual sensors (e.g cameras) have a key role, since they can capture rich and resourceful content. An important characteristics of video-based IoT applications is that they depend a lot on the quality of the video by increasing resolution. As a result, they generate a huge amount of data which is transmitted to the cloud for processing (video analytics) as IoT devices have limited storage and processing capabilities. An idea to help end users is to equip drones with hardware accelerators and they will fly over congested networks and help video-based applications by providing processing closer to the edge.

The overall goal of the thesis is to utilize drones (simulations) and develop innovative optimization frameworks for efficient resource utilization (e.g., processing, bandwidth) and optimal task allocation across multiple tiers. Specifically, a library of video based applications must be developed for FPGAs and offloading methodologies based on coverage and offloading cost.

PREREQUISITES:

FPGA, VHDL, computer architecture

READING MATERIAL:

1. Distributed Trade-Based Edge Device Management in Multi-Gateway IoT
2. Distributed QoS management for Internet of Things under resource constraints

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