LTAT.06.010 Pervasive Data Science

Lecture 2

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Recap

• Initial understanding of the project was presented
• Additional material to execute the project was given in last session
Overview

Goal: **How to perform a feasibility study?**

- The execution of the project should be oriented to its central idea
- The arguments of your project should show potential

**Result:** Guidelines and methodology to conduct a feasibility study
Example 1: Underwater Edge Computing
Edge computing

Concept: Bringing computing power close to end-devices

- Cloudlets
- Micro-clouds
- Edge and fog
  - Micro-services
(Underwater) Edge computing

Underwater environments can benefit from processing (Oceans, River and Lakes)

- Aquatic pollution
- Water quality
- Marine fauna

\[
\begin{align*}
\text{Floating Micro-cloud} & \quad \text{Remote computing resources} \\
\text{Underwater Micro-cloud} & \quad \text{Surface data center} \\
\text{Far deployments not reachable to surface} & \quad \text{Hotspot (Cloudlet/Edge)} \\
\end{align*}
\]

\[
\begin{align*}
\text{Low latency overhead} & \quad \text{Higher latency overhead}
\end{align*}
\]
(Underwater) Edge computing

Feasibility analysis and prototyping
(Underwater) Edge computing

Feasibility analysis and prototyping
(Underwater) Edge computing

Feasibility analysis and prototyping
(Underwater) Edge computing

Promising results?
(Underwater) Edge computing

Promising results?

….. Let’s take it to an in the wild environment
(Underwater) Edge computing
(Underwater) Edge computing
Example 2: Intelligent Advertisement Placement
Motivation: Mobile advertisement

Annoyance and disturbance for end user experience

Motivation: Mobile advertisement

Propose a new method (strategy, algorithm, etc)

Motivation: Mobile advertisement

Analysis of proposed method (testbed and user study)

Motivation: Mobile advertisement

Data collection
Motivation: Mobile advertisement

Results

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<th>Mean</th>
<th>SD</th>
<th>Median</th>
<th>Mean</th>
<th>SD</th>
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<td>1.031</td>
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(a)

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(b)

Results statistics. (a) Perceptive Ads (PA) vs. Conventional Ads (CA) placement. (b) Low Interaction + Perceptive Ads (LI+PA) vs. High Interaction + Perceptive Ads (HI+PA).

Next lecture

Iteration I (check pointing)
Questions?

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