Working Title: Serverside rendering for realtime AR applications

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Contents

This is a super fancy abstract, outlining the approach and findings of this masters thesis. More content t.b.d.

1 Introduction

1.1 Problem domain

- Mobile AR Graphics
- Tradeoff between performance and mobility

1.2 State of technology - 4th quarter 2020

- Gardner Hype Cyclce
- AR in Commercial Projects
- "AR Is useless" -¿ Techlead Quote

1.3 Use Case "Digital Twin" HHarbour

Since this is a commercial work, the commercial aspect should be mentioned here and dicussed briefly at least.

- Use Case description
- Business Value
- Stakeholder

1.4 Technological challenges

1.4.1 Mobile device constraints

1.4.2 Network

This is especially important for user experience.

- 5G Testsite at HH Harbour
- WIFI 6
- Software defined Network

1.4.3 Bandwidth

1.4.4 Packet loss

1.4.5 Server ressources

2 Related Work

- Nvidia and Microsoft Cloud Gaming
- XRchitecture
- ...

2.1 Deduction of Hypothesis

Something along bc. of this and that, does it make sense from an UX point of view to have serverside rendering?

3 Architecture

3.1 Considerations

3.2 How to lightweight and fast

3.2.1 nVIDIA Maxine

Encode videostreams with ML to save up to 90

3.3 Loadbalancing and Containerization

4 Implementation

4.1 Cross Platform vs. Ecosystems

4.2 Rapid changing Hard- and Software environments

4.3 nVIDIA cloud XR

Serverside rendering platform for AR/VR Contents.

5 Evaluation and research

5.1 Define research goals

5.2 User surveys

In order to evaluate UX, HCI aspects have to be considered.

5.3 Technical analysis

6 Conclusion

6.1 Results

6.2 Future Work

6.3 Acknowledgements