

## The concept, pros and cons of augmented reality in cultural tour guides: Showcase Carnuntum



# ***What is Wikitude?***

- ★ Wikitude company headquarters in Salzburg, ~20 employees
- ★ The World's leading mobile Augmented Reality platform (first mobile AR browser in 2008)
- ★ Voted "Best Augmented Reality Browser" for 2009, 2010, 2011, 2012 (Augmented Planet)
- ★ The Makers of the leading AR SDK, voted "Best AR Tool or Platform" 2011, 2012
- ★ Global reach:
  - ★ 15 million users, 32 languages
  - ★ 110 million POIs aggregated
- ★ The company behind the international AR standard "ARML" for data exchange



# Augmented Reality



Retail/Commerce



Travel



Location Based Services



Advertising



Social



E-learning



Gaming



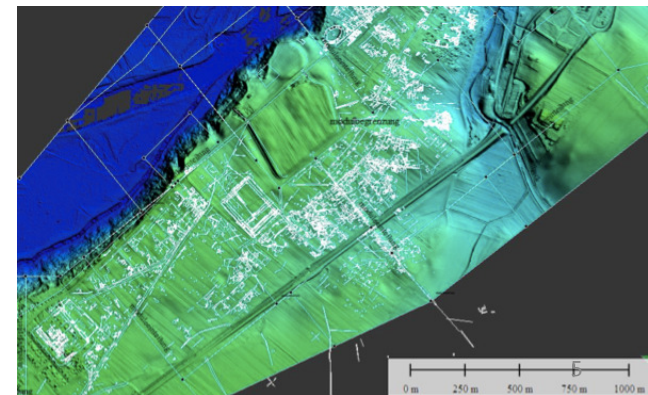
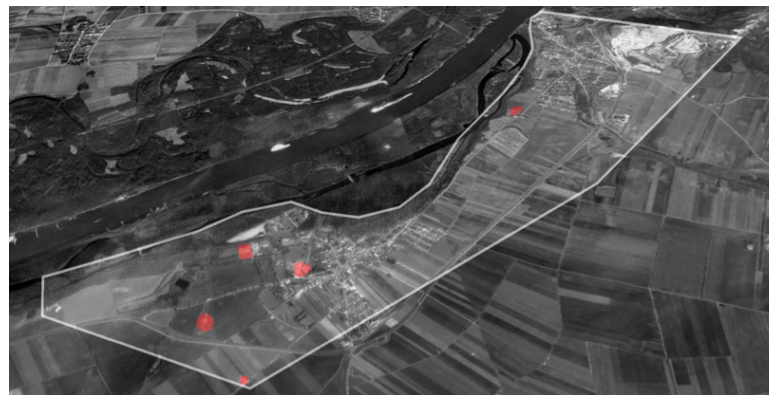
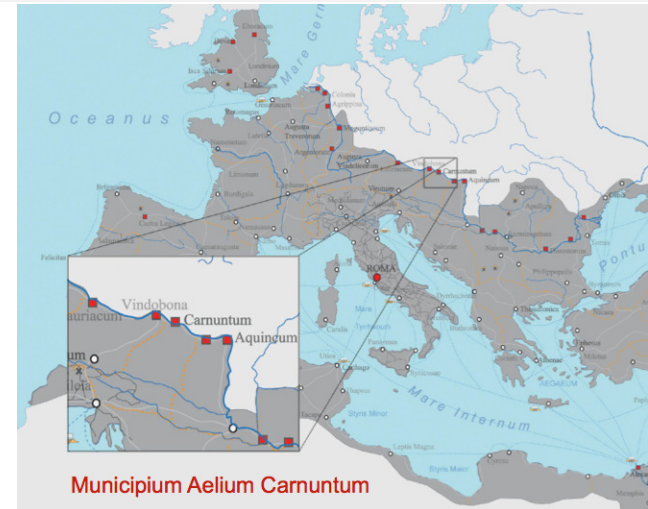
# ***Augmented Reality & Cultural Heritage***



# ***Carnuntum***

- Military camp and capital of the Upper Pannonia province
- Well preserved due to agricultural land use

Still less than 1% of the area excavated





# *Carnuntum Reconstruction*

- New data acquisition and detailed reconstruction for 2011 exhibition
- Interdisciplinary cooperation on archeological research, landscape reconstruction and architectural reconstruction
- Focus on utility for archaeological heritage as opposed to technical feasibility

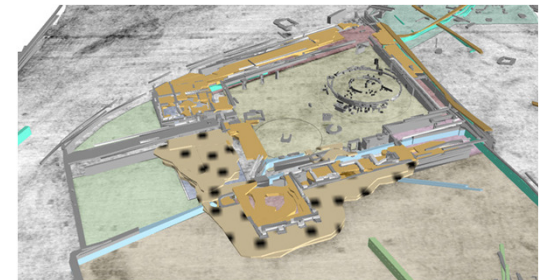


# *Carnuntum Video*



# *Gladiators' school in AR*

- Was discovered only recently in 2011
- Mobile ground sonar
- „Non-invasive“ reconstruction until excavation permit is authorized
- Use AR to make empty site accessible to visitors





## ***Gladiators' School Video***

# ***Benefits of AR***

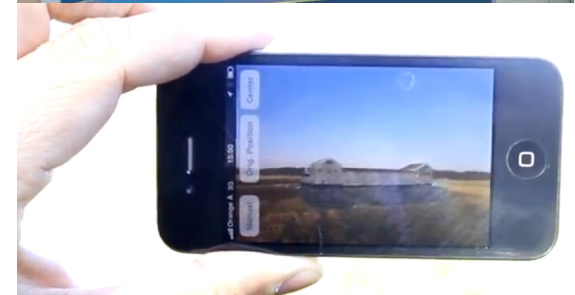
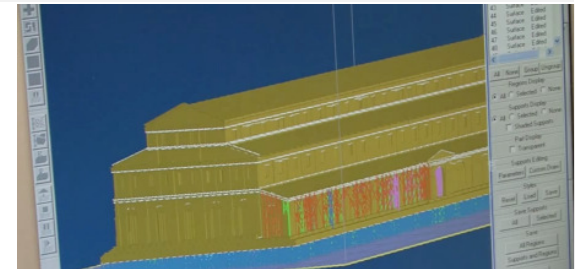
- Augmented Reality enables novel use cases
- Cost efficient visualization of large scale buildings
- Rich user experience without altering the site
- Interactive & immersive experience
- Augmented reality as important building block for varied visitor experience



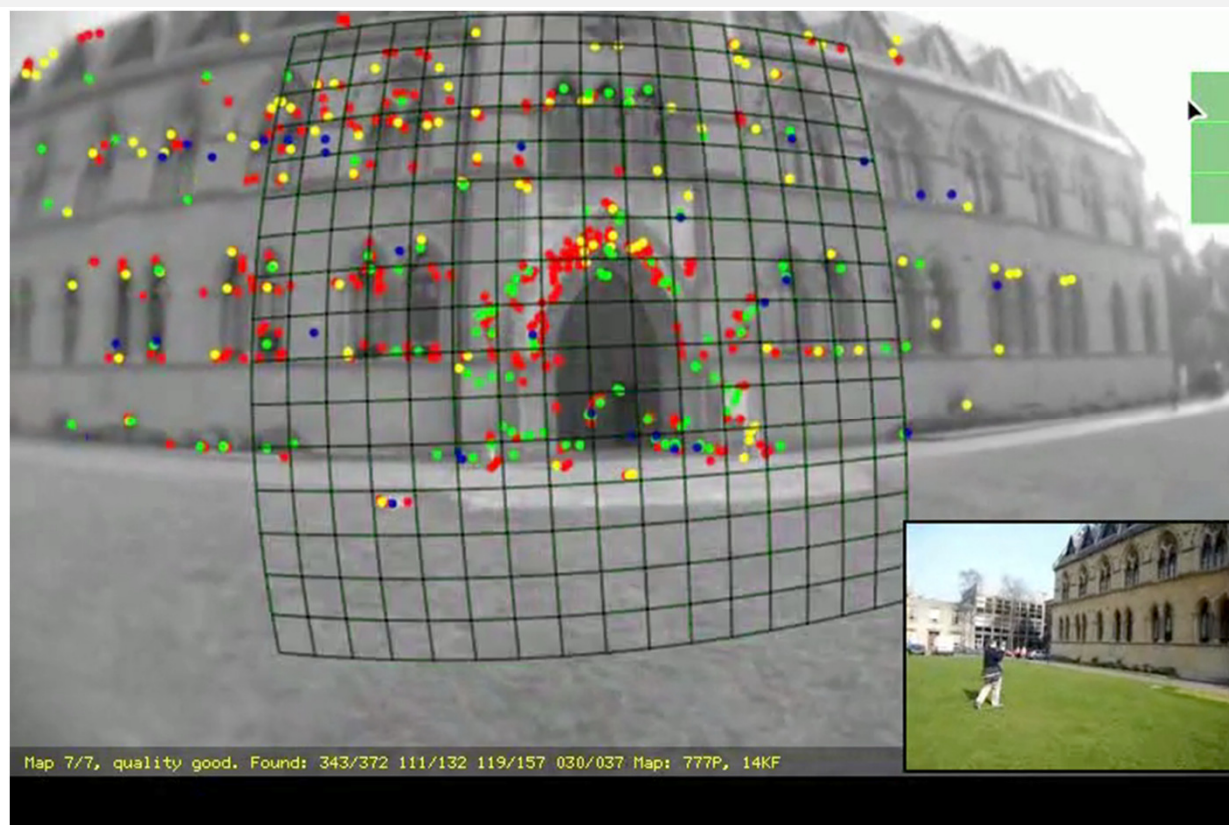


# ***Challenges for AR***

- Availability of high quality content
- Complexity of 3D models & formats
- Usage time constrained by fatigue
- Bad display legibility in direct sunlight
- Device handling:  
download app vs device loaning
- Accuracy of augmentation



# ***Computer vision based AR***





# ***Best Practices & Conclusion***

- High quality content is vitally important
- Adapt AR usage scenario to compensate for current (technical) constraints
- Use AR as complementary building block
- AR can be successfully applied *today* under well defined operating conditions
- AR will get real hot when high accuracy across a wide range of working conditions is achieved
- When it is done right AR provides fantastic opportunities and user experience





***Questions?***

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