

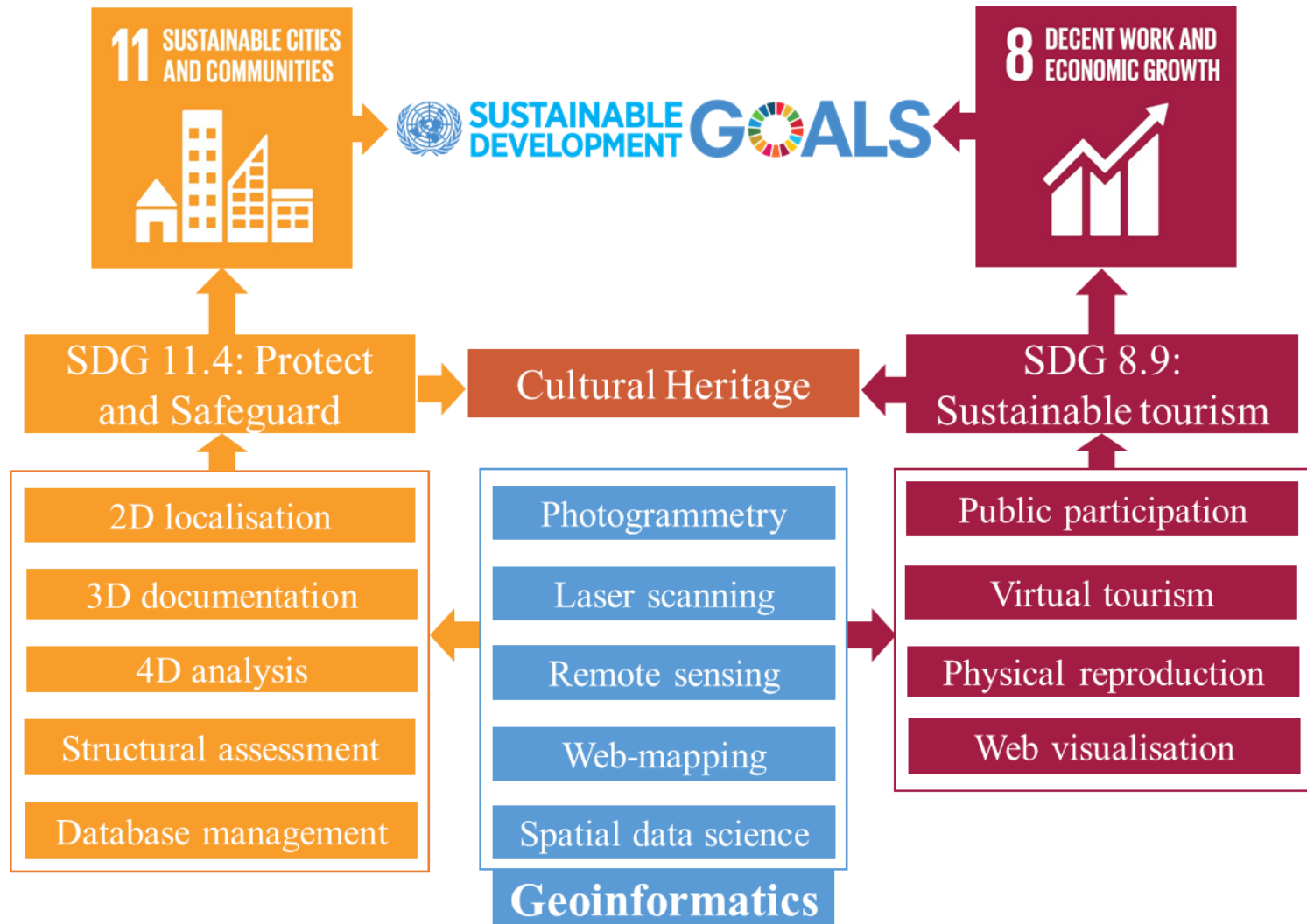
Geoinformatics for the Conservation and Promotion of Cultural Heritage in support of the UN Sustainable Development Goals

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UN Sustainable Development Goals

- 17 Goals, 169 targets to be achieved by all countries by 2030
- Address ALL aspects of sustainable development





Disaster Risk Reduction of Heritage Structures

- EPSRC: Disaster Risk Reduction of Heritage Structures in Nepal (<https://research.ncl.ac.uk/heritageconservation/>)
 - PI: Dr Wen Xiao; Co-Is: Prof Jon Mills, Dr Vasilis Sarhosis, Dr Sean Wilkinson (Civil Engineering)
 - Aligned with the UN SDGoals 11.4 and 8.9, and Nepal's national strategy for disaster risk management (2009)
 - To adopt state-of-the-art facilities and approaches for the development of a risk based analysis tool to support the decision making process on heritage protection and management to natural disasters
 - Contribute directly to the recovery of local people's livelihoods and the revitalization of economic development by indirectly supporting and promoting to tourism development
 - **3D Realistic Reconstruction, Digital Documentation and Structure Analysis/Inspection of heritage sites**

Kathmandu, Nepal



Share Our Cultural Heritage (<https://soch.ncl.ac.uk/>)

Share Our Cultural Heritage (SOCH)

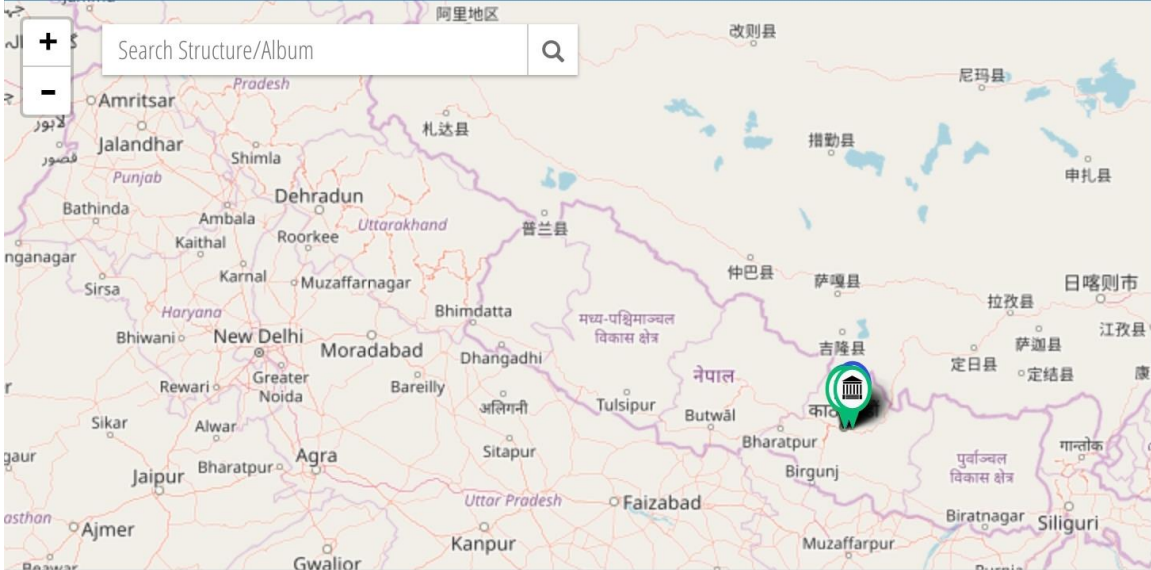
About Login Register Download ▾ Help

+

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Search Structure/Album

Q



My Album List

SN	Structure	Action
1	Leaning tower	3D
2	Shiddhilaxmi	3D
3	Lion	3D
4	MiniTemple	3D
5	NamasteStatue1	3D
6	Mahadev Temple	

Structure Status

No Damage
 Minor Crack
 Partial Damage
 Full Damage

Current Album

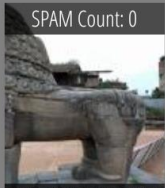
Album ID: 201

Structure: Lion

Album Name: Lion

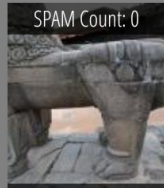
Add Photos

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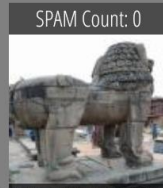
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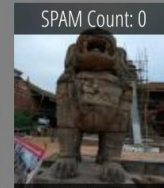
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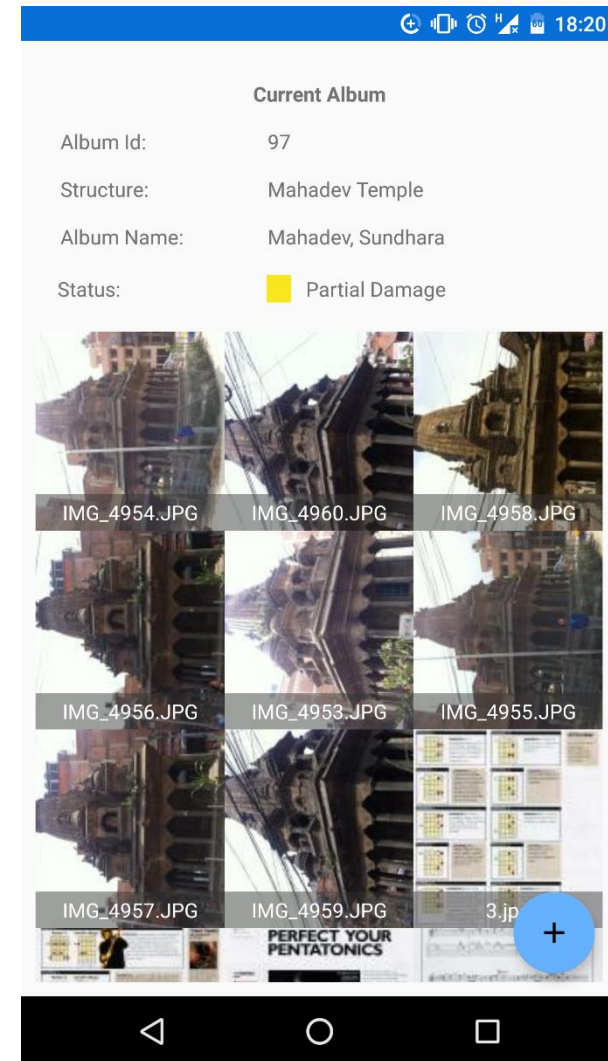
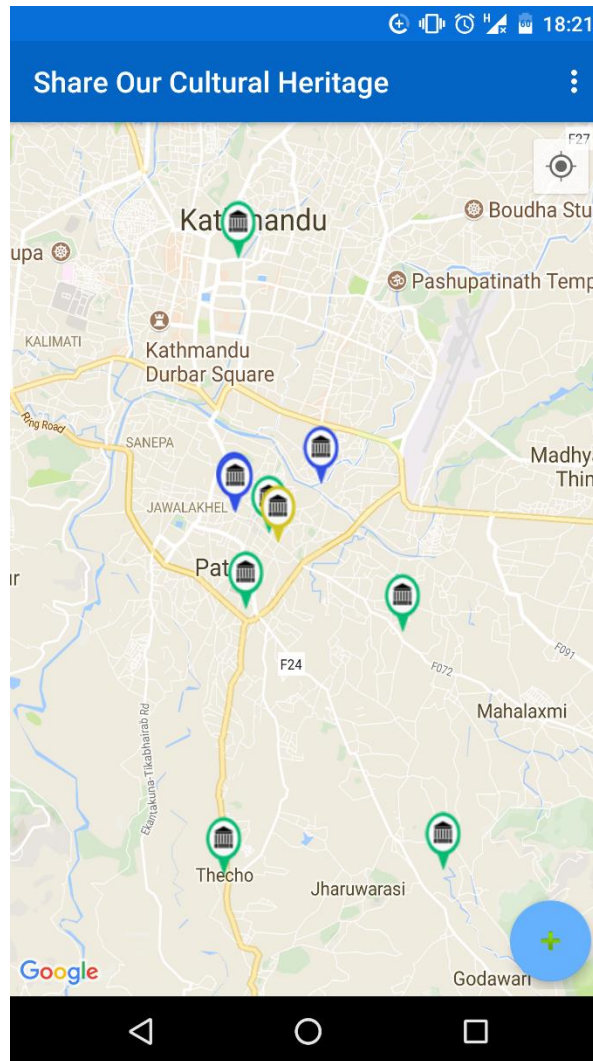
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Share Our Cultural Heritage (Mobile App)



SOCH App



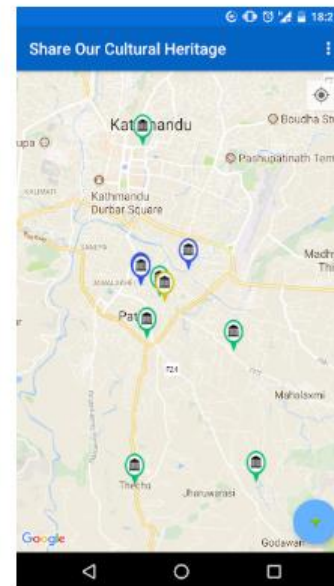
SOCH

Hari Krishna Dhonju **Maps & Navigation**

3 PEGI 3

i This app is compatible with all of your devices.

Installed



Online geo-crowdsourcing system, named Share Our Cultural Heritage (SOCH), which can be used for large-scale heritage documentation, visualisation and sharing via web and mobile GIS. Cultural heritage data, such as textual stories, locations and images collected via computers and portable devices, are geo-referenced and presented to the public by web-mapping. Using photogrammetric 3D

Crowdsourcing for 3D documentation



Dhonju H, [Xiao W](#), Shakya B, Mills J, Sarhosis V. Documentation of heritage structures through geo-crowdsourcing and web-mapping. In: ISPRS Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. 2017

Online 3D Visualisation

Share Our Cultural Heritage (SOCH) : 3D Viewer



Online 3D Visualisation

Share Our Cultural Heritage (SOCH) : 3D Viewer



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Share Our Cultural Heritage (SOCH)



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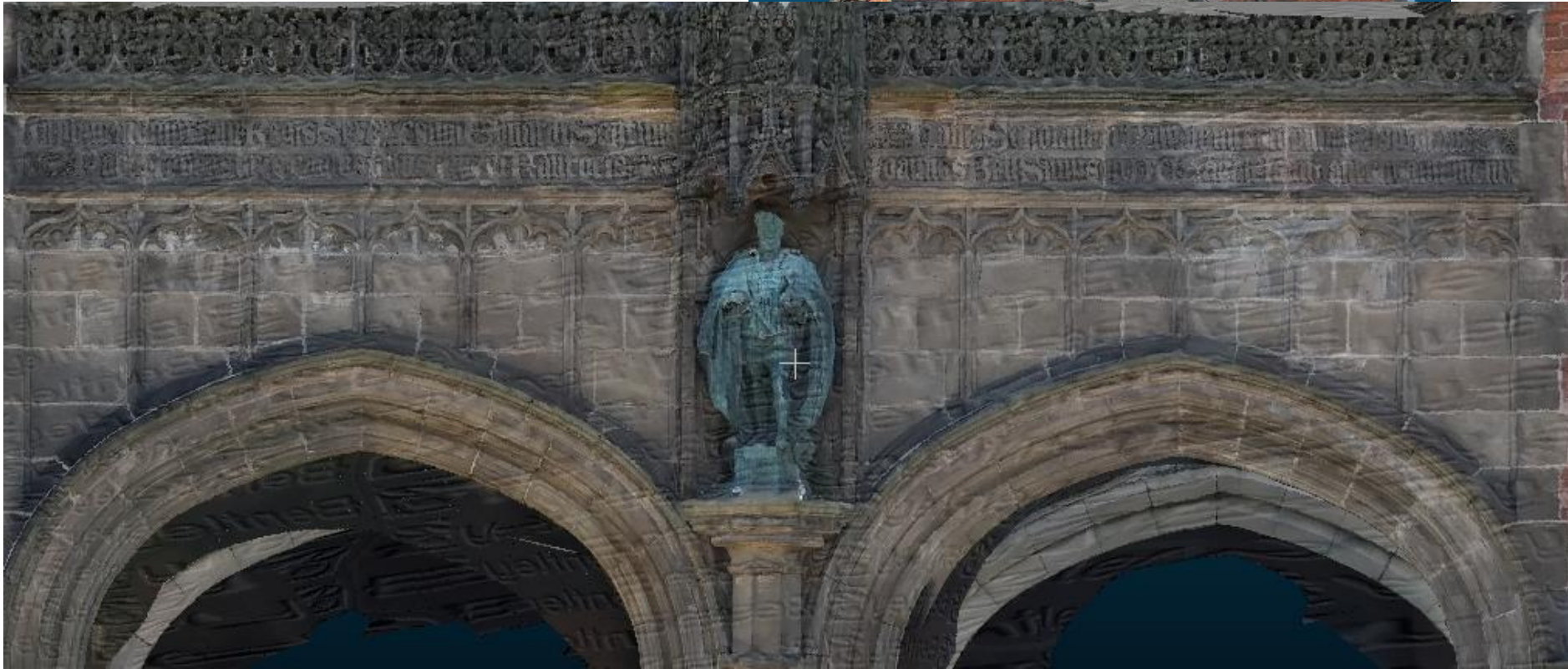
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Share Our Cultural Heritage (SOCH) : 3D Viewer

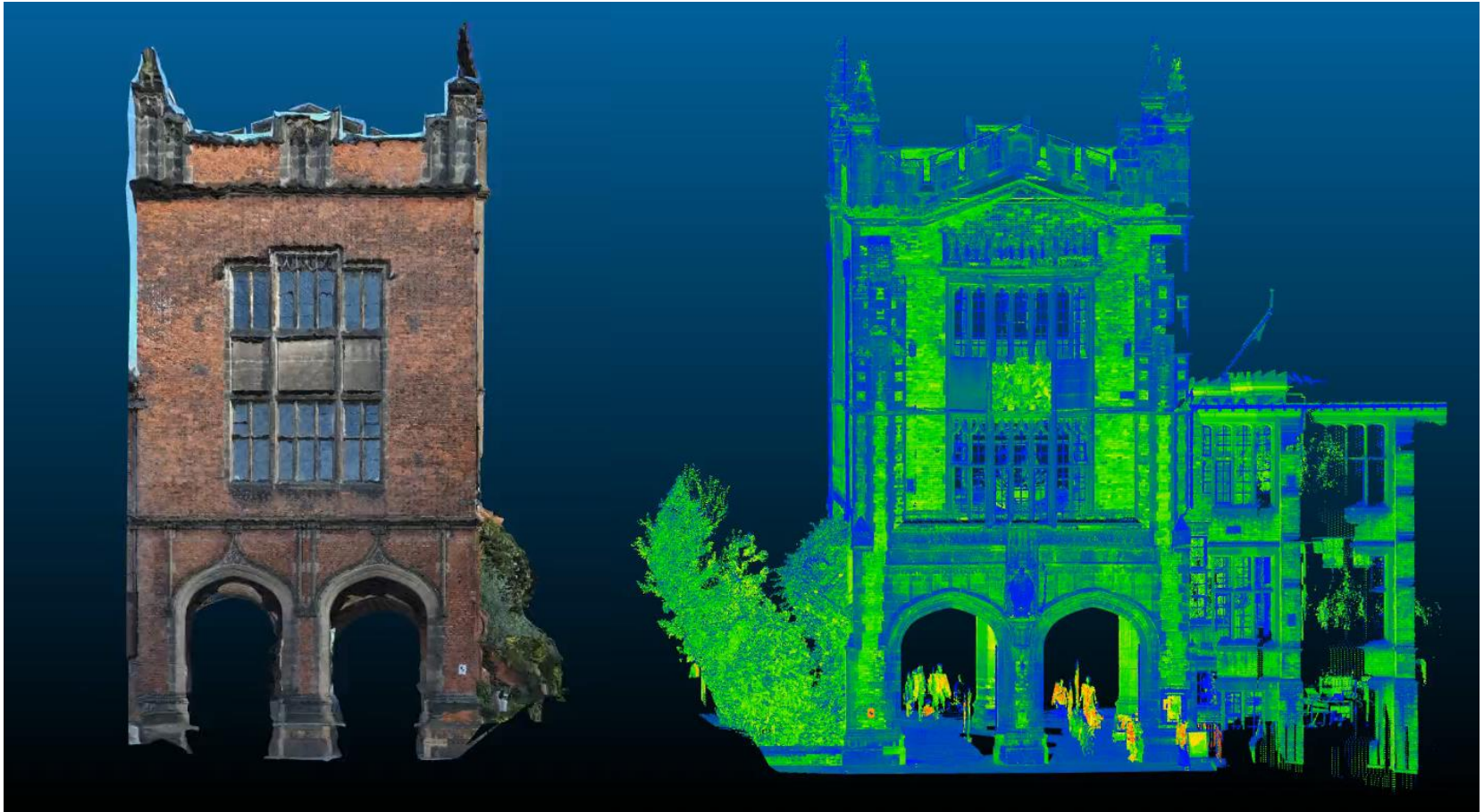


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Accuracy assessment



Low-cost photogrammetry vs. 3D laser scanning



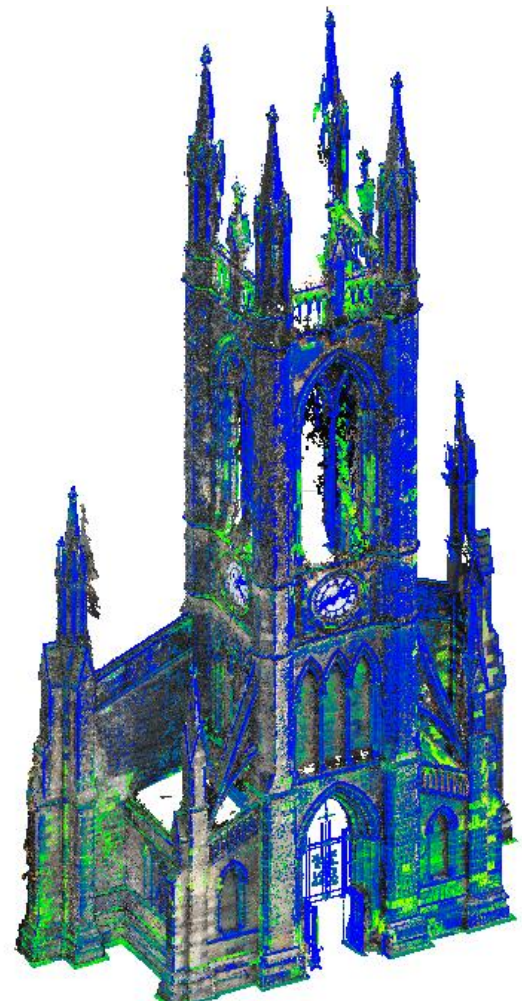
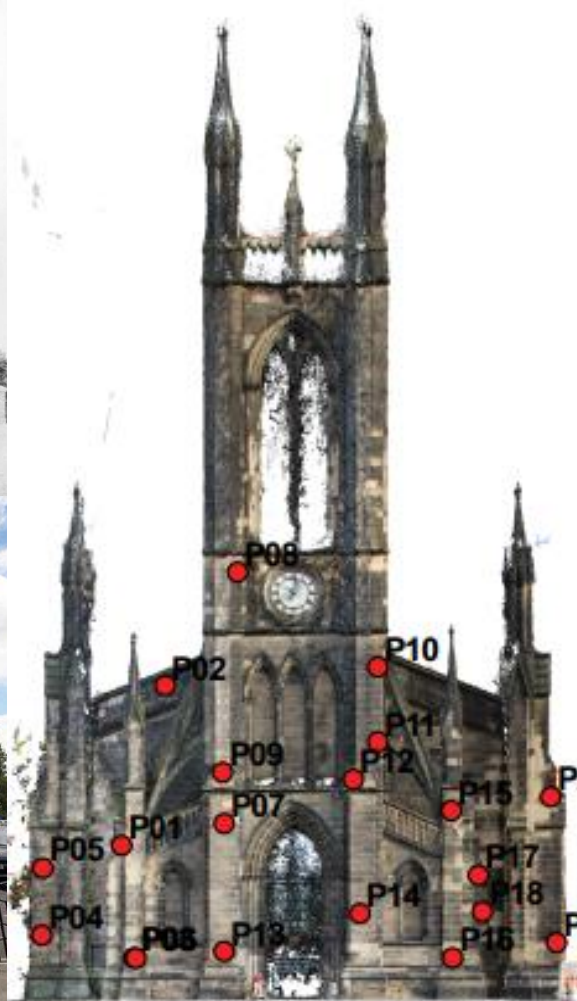
Dhonju H. K., Xiao W. et al., Feasibility study of low-cost image-based heritage documentation in Nepal. ISPRS Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. 2017.

Church of St. Thomas the Martyr

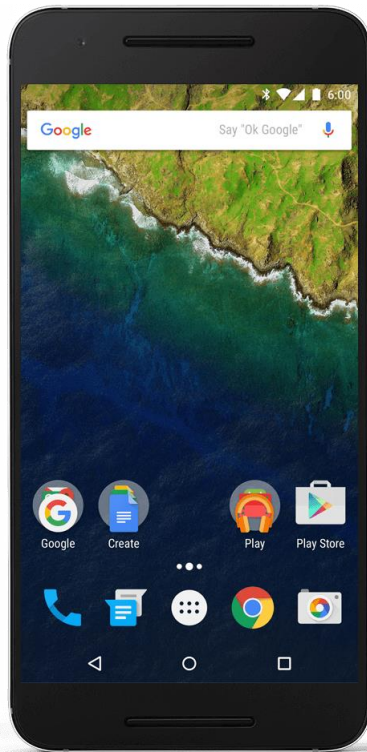
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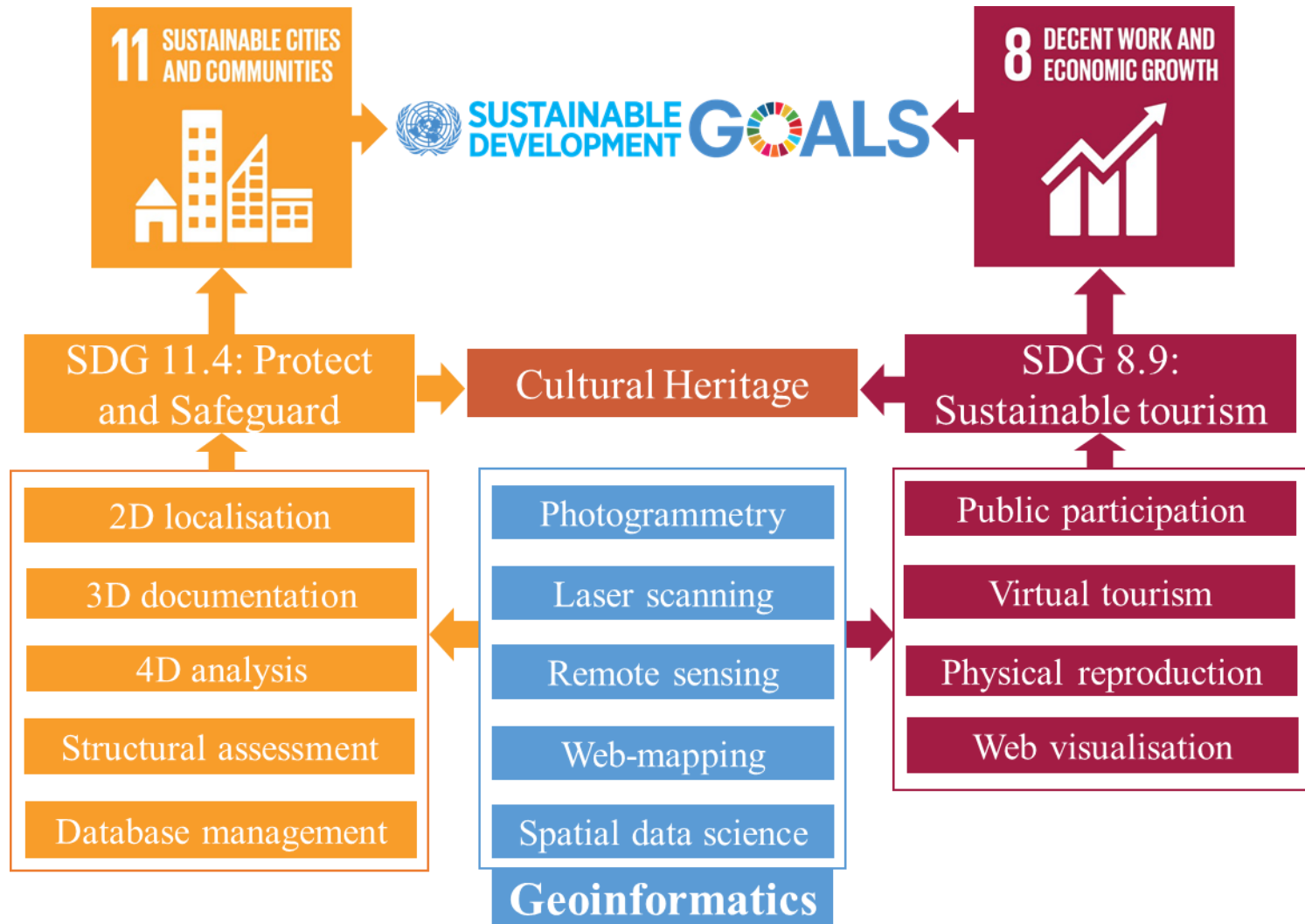
2017



Next...



Contribution to SDGs



Thank you!

