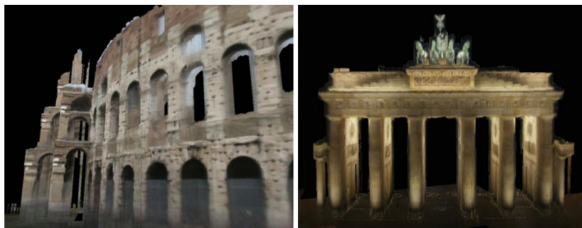


# Building Rome on a Cloudless Day

JM. Frahm, P. Georgel, D. Gallup, T. Johnson, R. Raguram,  
C. Wu, YH. Jen, E. Dunn, B. Clipp, S. Lazebnik and M. Pollefeys (ECCV 2010)



- ▶ Dense 3D reconstruction from unregistered Internet-scale photo collections
- ▶ 3 million images within a day on a single PC
- ▶ Geometric and appearance constraints to obtain a highly parallel implementation
- ▶ Extension of appearance-based clustering <sup>1</sup> and stereo fusion <sup>2</sup>
- ▶ Geometric cluster verification using a fast RANSAC method
- ▶ Local iconic scene graph reconstruction and dense model computation using views obtained from iconic scene graph
- ▶ Two orders of magnitude higher performance on an order of magnitude larger dataset than state-of-the-art

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<sup>1</sup>Li, X., Wu, C., Zach, C., Lazebnik, S., Frahm, J.M.: Modeling and recognition of landmark image collections using iconic scene graphs. In: ECCV. (2008)

<sup>2</sup>Gallup, D., Pollefeys, M., Frahm, J.M.: 3d reconstruction using an n-layer heightmap. In: DAGM (2010)