

Citizen Visual Search Engine: Detection and Curation of Urban Objects

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Abstract. Increasingly, the ubiquity of satellite imagery has made the data analysis and machine learning of large geographical datasets one of the building blocks of visuospatial intelligence. It is the key to discover current (and predict future) cultural, social, financial and political realities. How can we, as designers and researchers, empower citizens to understand and participate in the design of our cities amid this technological shift? As an initial step towards this broader ambition, a series of creative web applications, in the form of visual search engines, has been developed and implemented to data mine large datasets. Using open sourced deep learning and computer vision libraries, these applications facilitate the searching, detecting and curating of urban objects. In turn, the paper proposes and formulates a framework to design truly citizen-centric creative visual search engines -- a contribution to citizen science and citizen journalism in spatial terms.

Keywords: Deep Learning, Computer Vision, Satellite Imagery, Citizen Science, Artificial Intelligence.