

Query

Attribute-Graph: A Graph based approach to Image Ranking

Nikita Prabhu and R. Venkatesh Babu Computational and Data Sciences Indian Institute of Science, Bangalore



Motivation

Retrieved Images







Scene Context



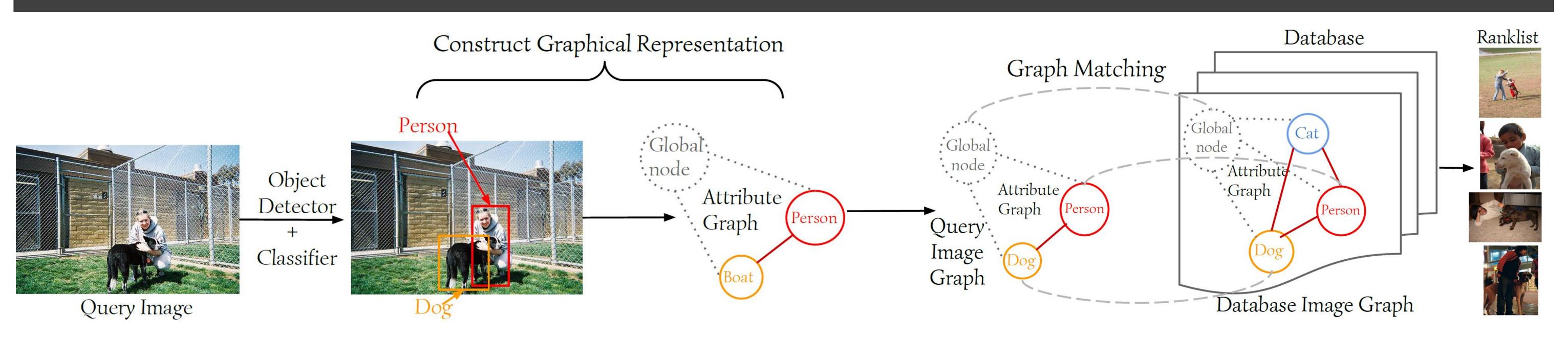






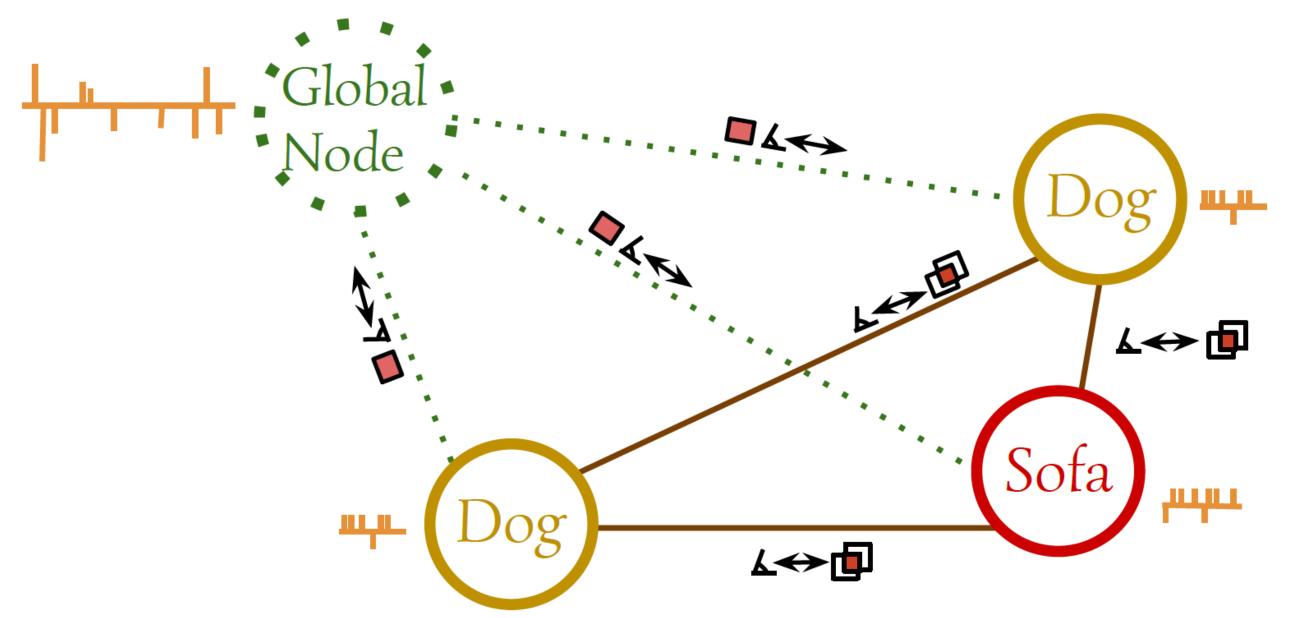
Relative Positions of Objects

Overview



Attribute-Graph

- Node Attributes Node Area
- ∠ Edge Orientation↔ Edge Magnitude
- Overlap Area



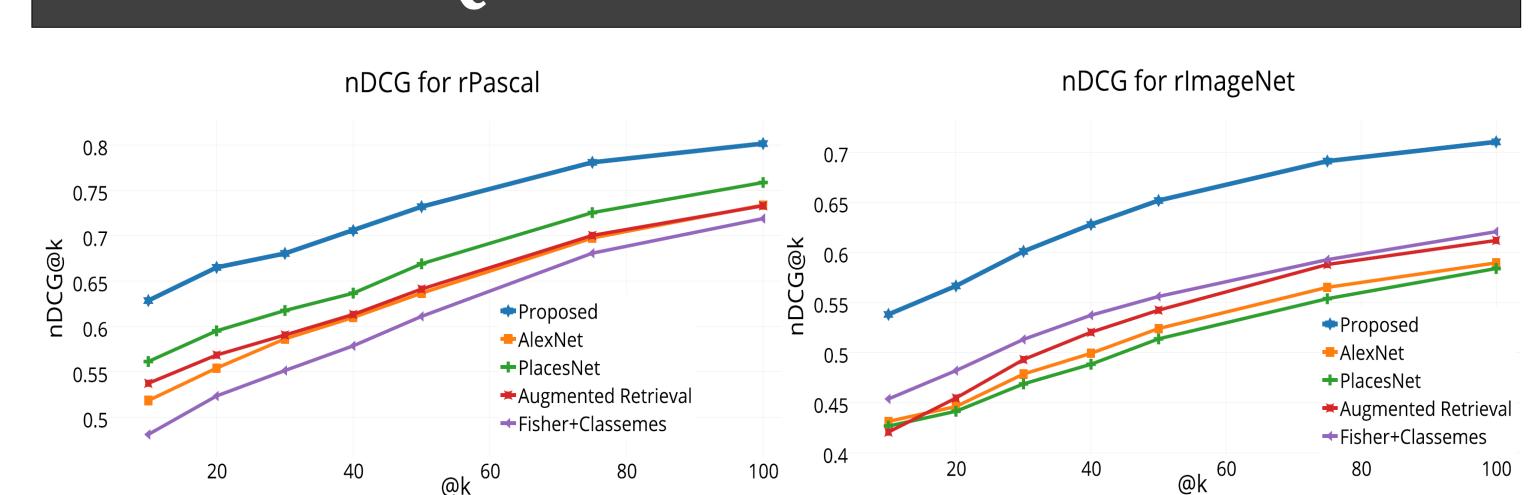
An image and the corresponding Attribute-Graph

Databases

Database	No. of Queries	Average References per query	No. of Indoor scenes	No. of Outdoor scenes	Average Objects per query
rPascal	50	180	18	32	4
rImageNet	50	305	14	36	8

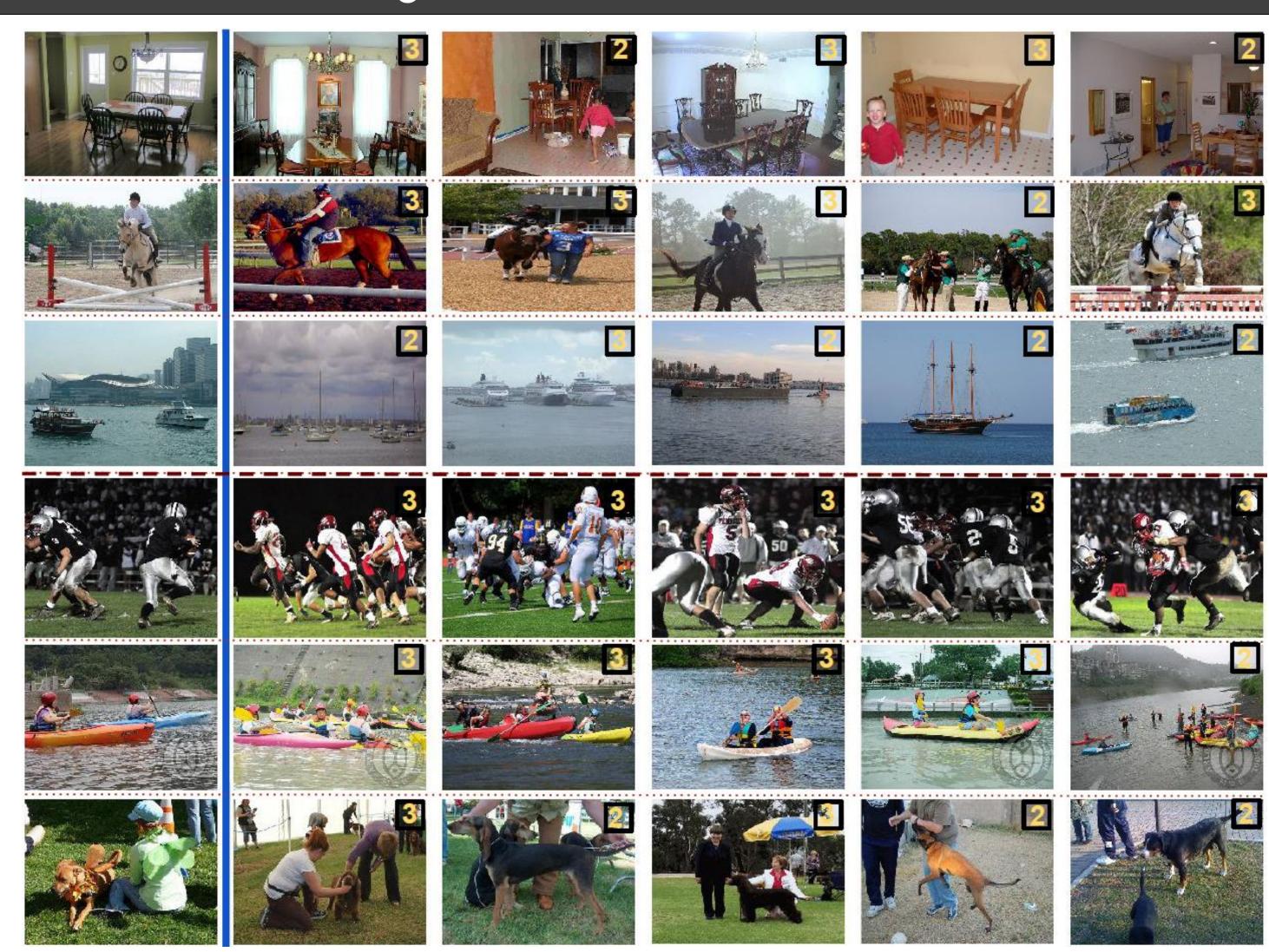
- Each reference image was annotated as excellent, good, fair or irrelevant with respect to a particular query
- Final score was determined by taking median of 5 annotations

Quantitative Results



nDCG comparison against Ranking truncation level 'k' for rPascal & rImageNet

Qualitative results



Ranking results for the Proposed method: Column 1: Queries; Columns 2-6: First 5 retrieved images. Numbers in the corners: User annotations

Publications

Prabhu, Nikita, and R. Venkatesh Babu. "Attribute-Graph: A Graph based approach to Image Ranking." ICCV, 2015.

