Architectural Style Classification of Domes
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ABSTRACT
Domes are architectural structural elements characteristic for ecclesiastical and secular monumental buildings, like churches, basilicas, mosques, capitols and city halls. In the scope of building facade architectural style classification the current paper addresses the problem of architectural style classification of facade domes.

Building facade classification by architectural styles is achieved by classification and voting of separate architectural elements, like domes, windows, towers, etc. Typical forms of the structural elements bear the signature of each architectural style.

Our approach classifies domes of 3 architectural styles - Renaissance, Russian and Islamic. We present a three-step approach, which in the first step analyzes the height and width of the dome for the identification of Islamic saucer domes, in the second step detects golden color in YCbCr color space to determine Russian golden onion domes and in the third step performs classification based on dome shapes, using clustering and learning of local features. Thus we combine 3 features - the relation of dome width and height, color and shape, in a single methodology to achieve high classification rate.