RFBfeat Deep Neural Network for Crossview Remote Sensing Image Matching

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Abstract

Accurate image matching is a fundamental task in computer vision with diverse applications, but it faces several major challenges. These challenges include differences in perspective and the complexity of managing images with different resolutions. Differences in perspective, attributed to different angles of image registration, have historically confounded conventional matching methods. Another challenge is the different resolution of input images. In this article, a deep neural network is proposed to match satellite images with UAV images, which solves these two major challenges. In this network, RFB blocks are used to enhance feature maps. RFBs expand the field of influence while taking into account central information, thereby strengthening the robustness of the network and ultimately improving the matching results. The simulation results show that the proposed method has a higher efficiency than the existing methods and has been able to match two images with two different viewing angles well.

Keywords: Image Matching, Deep Neural Network, Remote Sensing Images, Drone Images

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