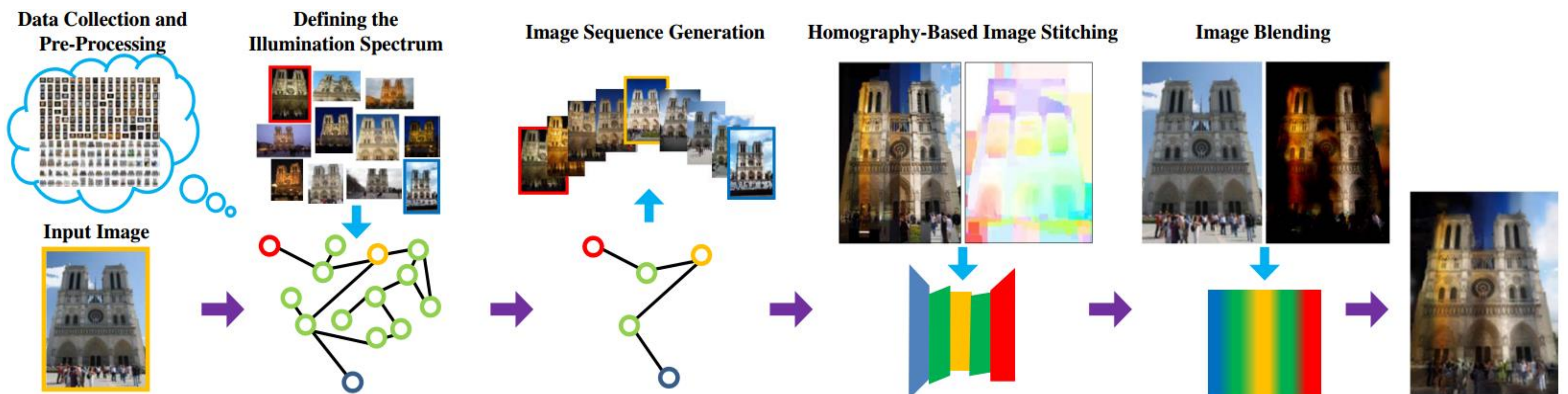


Synthesizing Illumination Mosaics from Internet Photo-Collections

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Framework



Goals

1. Automatically find image sequences that have smooth illumination transition from Internet photo collections.
2. Generate illumination mosaics that convey large range of scene appearance.

Methods

Building neighborhood graph

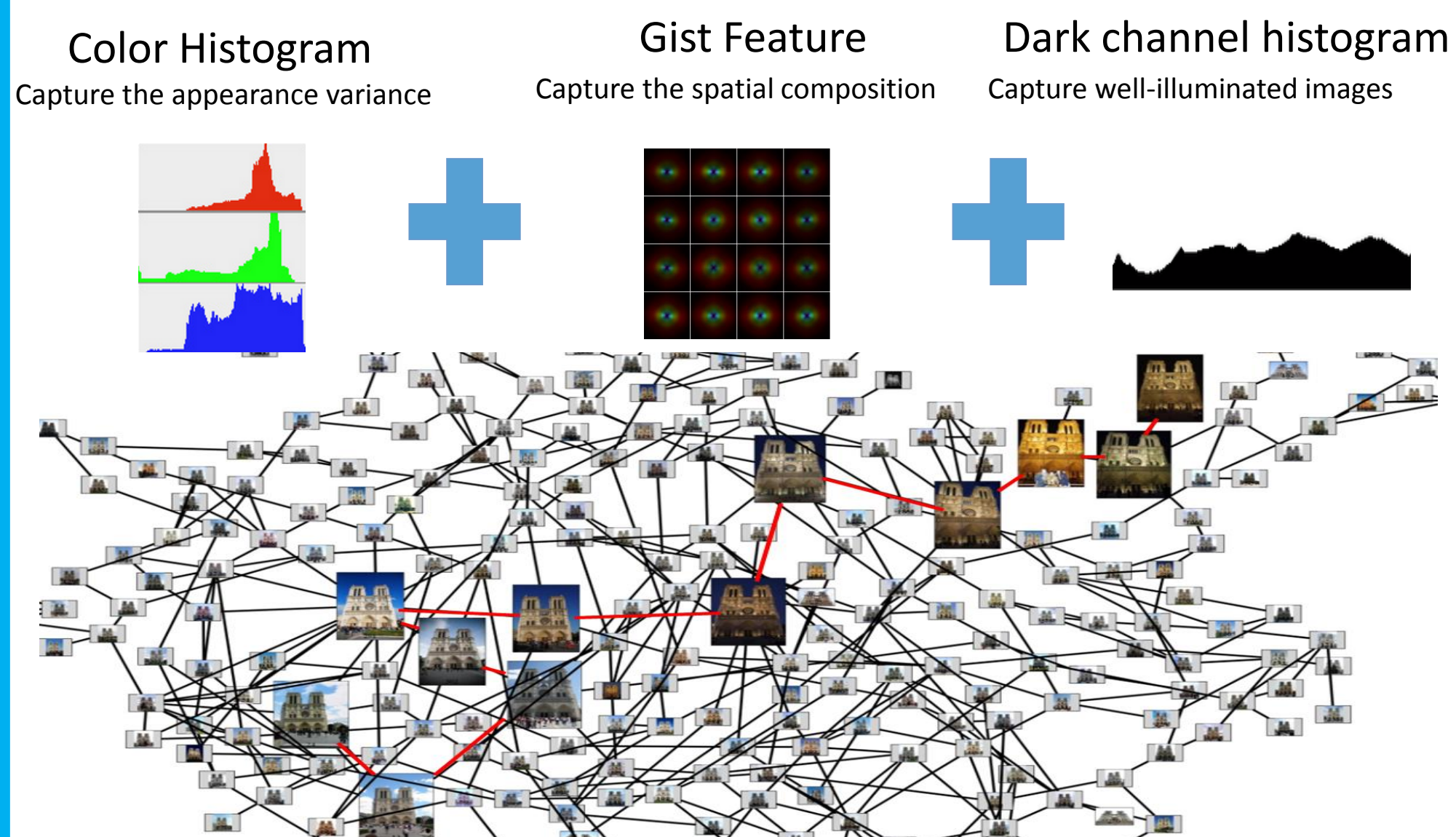
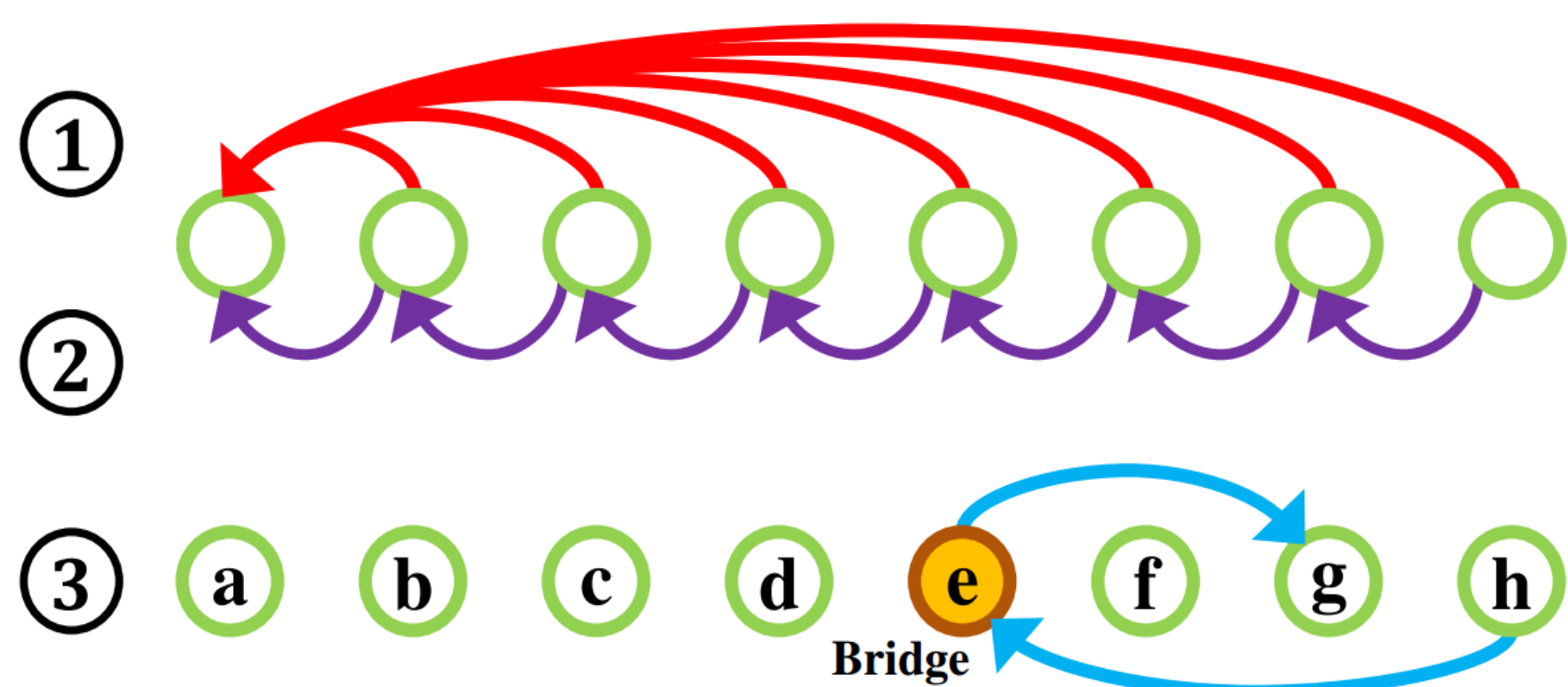


Image stitching



$$C_{i,i+1} < \max_{k \neq i} (C_{i,k} + C_{k,i+1}) / 2$$

$$C_{i,j} = m_{i,j} * (a_{i,j} + a_{j,i})$$

$m_{i,j}$ is # of inlier matches between image I_i and I_j

$a_{i,j}$ is convex hull area ratio attained by inliers

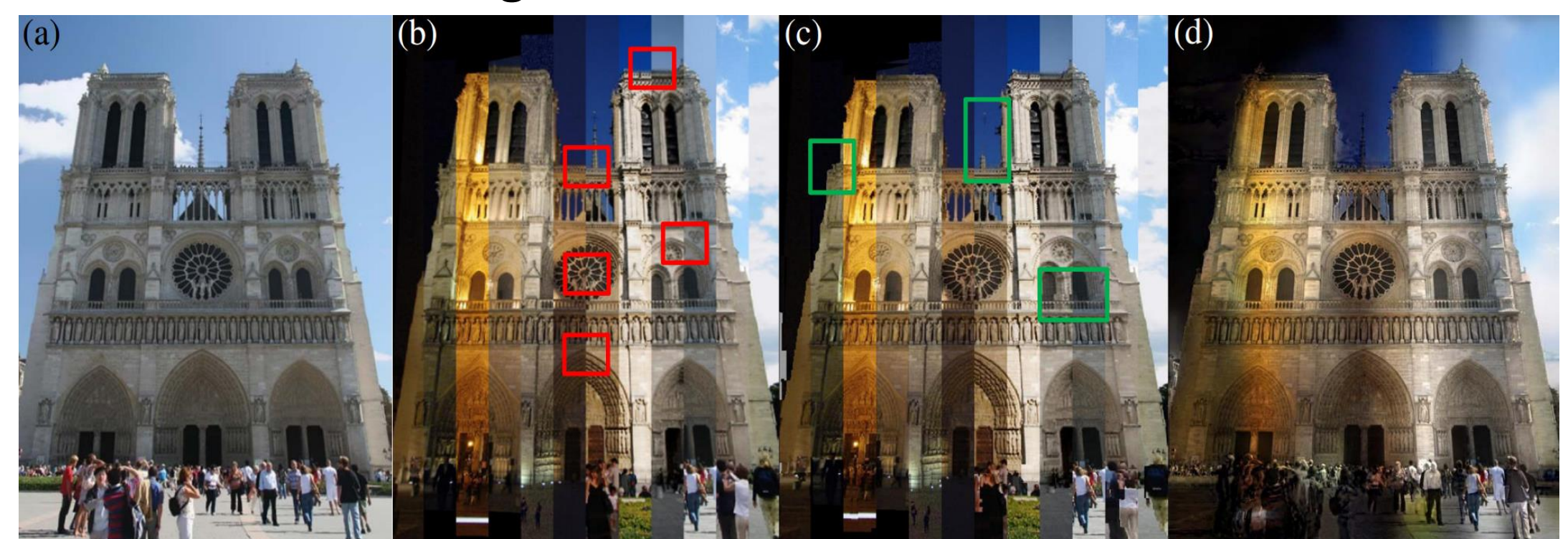
Experiments

Homography

Homography
Alignment

SIFT-flow
Alignment

Color
transfer



Comparisons with previous works[1][2]



More Results



[1] E. Reinhard, M. Ashikhmin, B. Gooch, and P. Shirley. Color transfer between images. Computer Graphics and Application, 21(5):3441, 2001.

[2] Y. Shih, S. Paris, F. Durand, and W. Freeman. Data-driven hallucination for different times of day from a single outdoor photo. ACM Transactions on Graphics (TOG), 32(6), 2013