

## **SAMANTHA: a Hierarchical, Efficient, Available Structure and Motion Pipeline**

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**Abstract:** We will demonstrate our Structure and Motion pipeline, called Samantha, an approach to 3D reconstruction from images which is both more robust and computationally cheaper than current competing approaches. Pictures are organized into a hierarchical tree which has single images as leaves and partial reconstructions as internal nodes. The method proceeds bottom up until it reaches the root node, corresponding to the final result. This framework is one order of magnitude faster than sequential approaches, inherently parallel, less sensitive to the error accumulation causing drift and truly uncalibrated, not needing EXIF metadata to be present in pictures. Verona dataset: a thousand images from Verona city center. From left to right, the point cloud superimposed to an aerial view and three sightseeing places from the reconstructed data. Our results have been verified both qualitatively producing compelling point clouds and quantitatively, comparing them with laser scans serving as ground truth. Our demo will consist of a poster, several videos of our results and a live demonstration.