NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Computer Science and Engineering
College of Engineering

Mesh R-CNN++

For 3D Mesh Generation: From Single to Multiple Views

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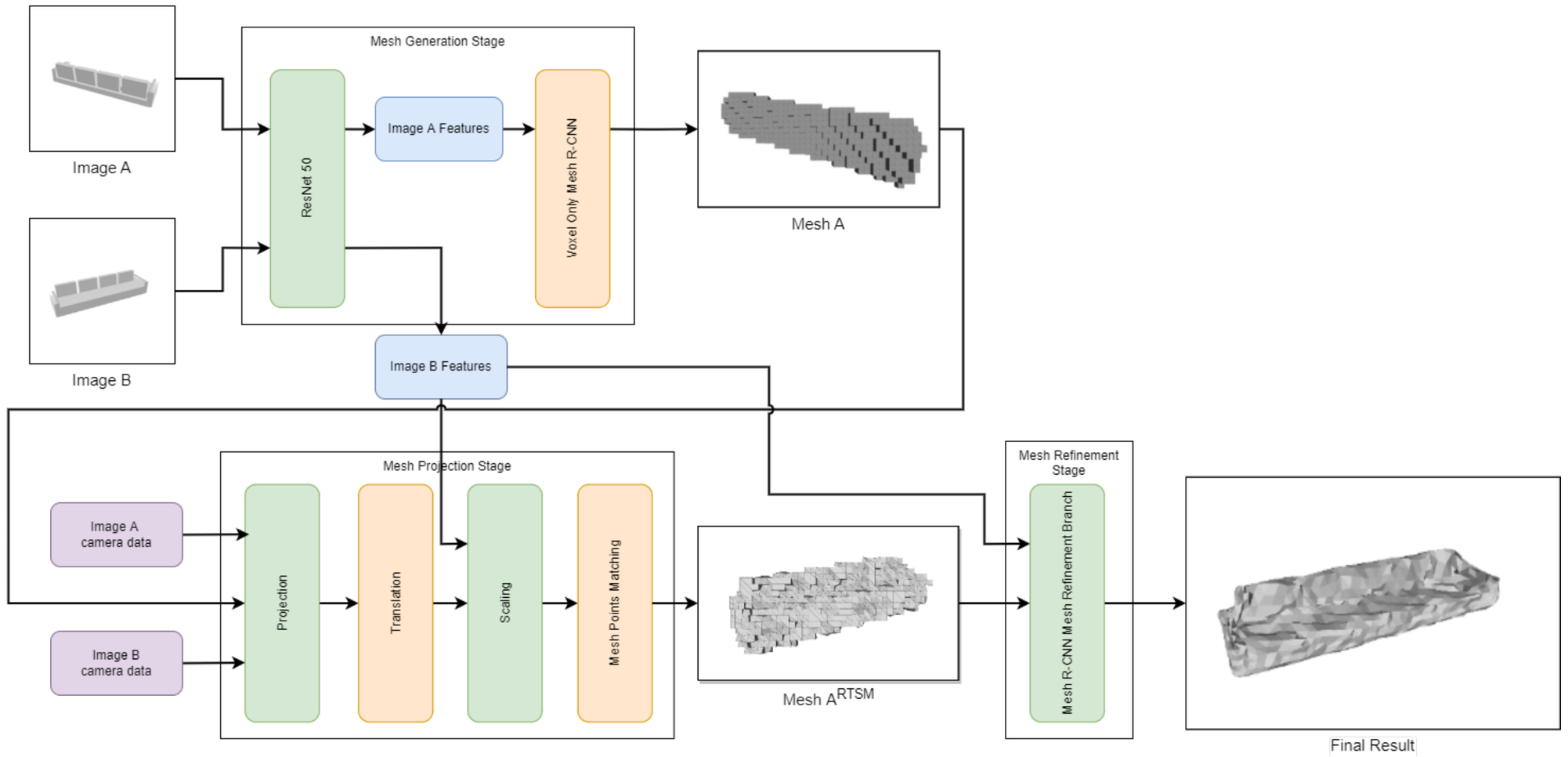
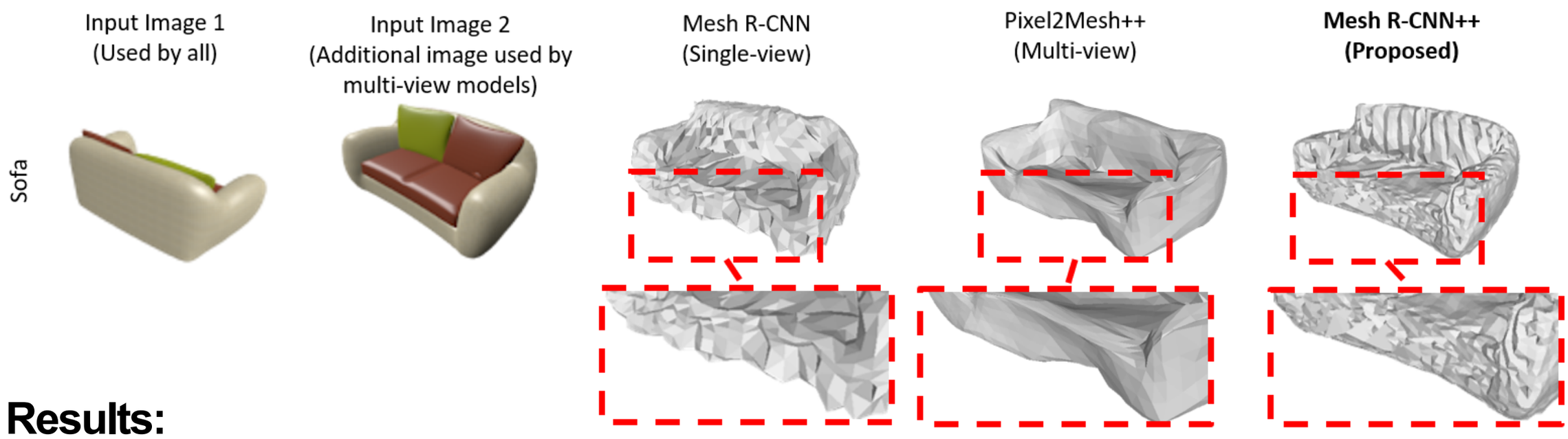


Project Objectives:

Inferring the 3-dimensional structure and geometry of scenes and objects from one or multiple 2-dimensional images has been one of the primary goals of image-based 3D reconstruction. Inspired by traditional multiple view geometry methods, this project proposed, Mesh R-CNN++, a multi-view deep learning shape predictor. Mesh R-CNN++ receives 2 color images of an object captured from different viewpoints (with known camera poses) and produces a 3D mesh model in the world coordinates that can accurately capture the surface details and thin structures of the objects in the input image(s).



Results:

Compared to other single and multi-view deep learning shape predictors, Mesh R-CNN++ was able achieved better results based on F1 and Chamfer Distance (CD) score, achieving state-of-the-art performance.