



Mesh Smoothing using Pointer Networks

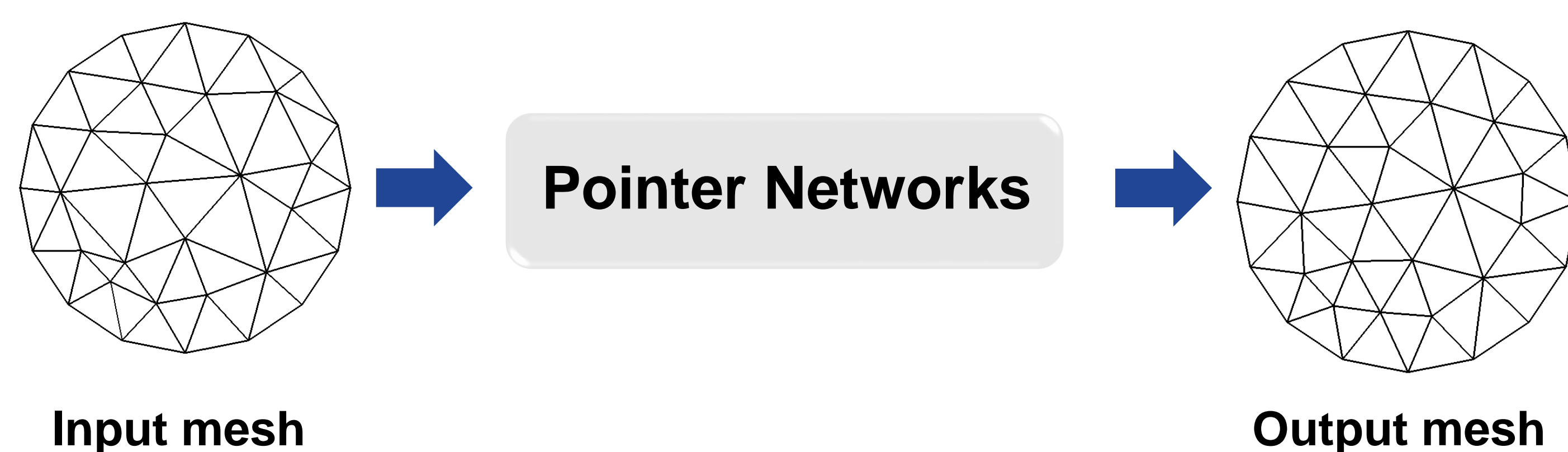
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Overview

We propose a novel approach for mesh smoothing using Pointer Networks.

The main goal of this work is to provide first steps towards data-driven mesh smoothing.



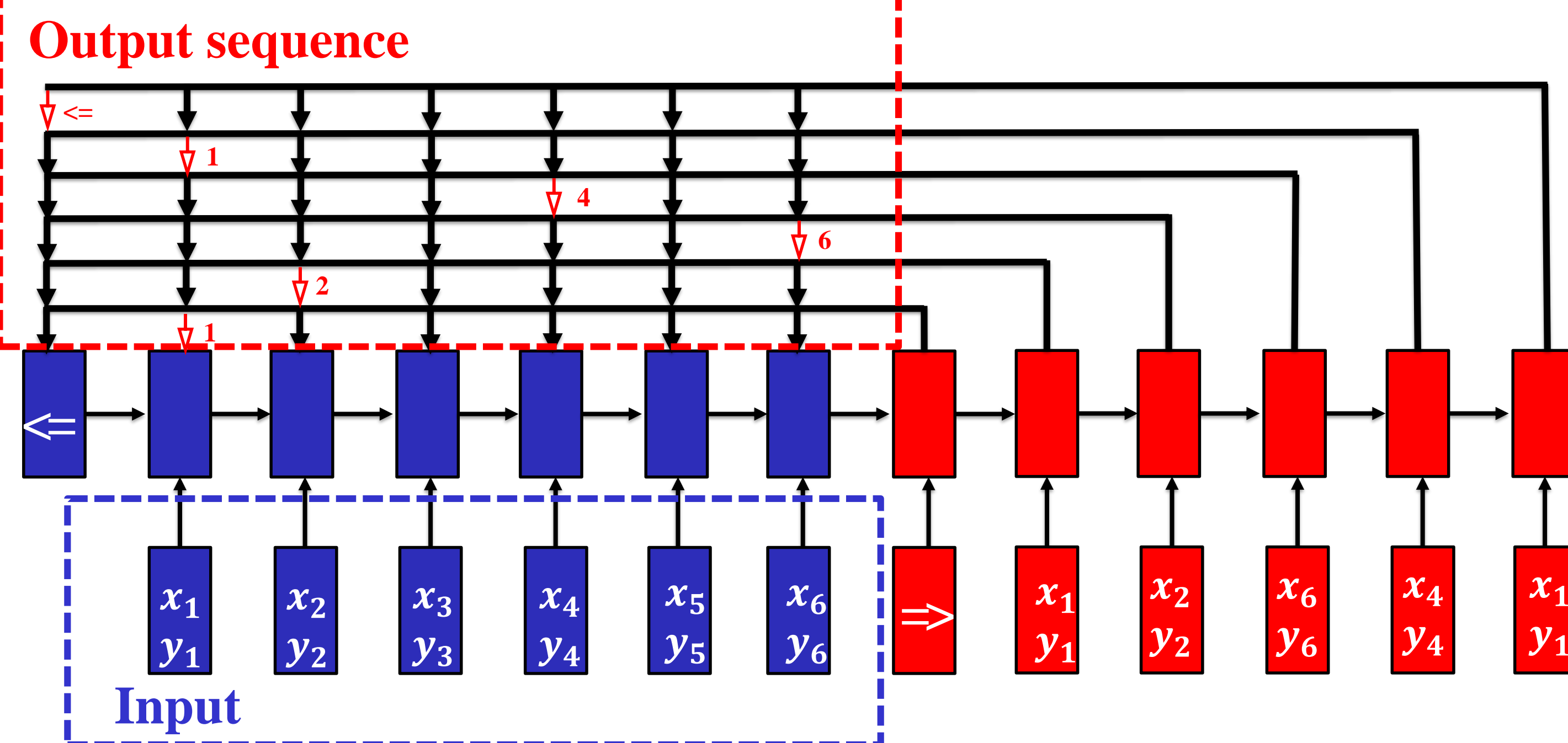
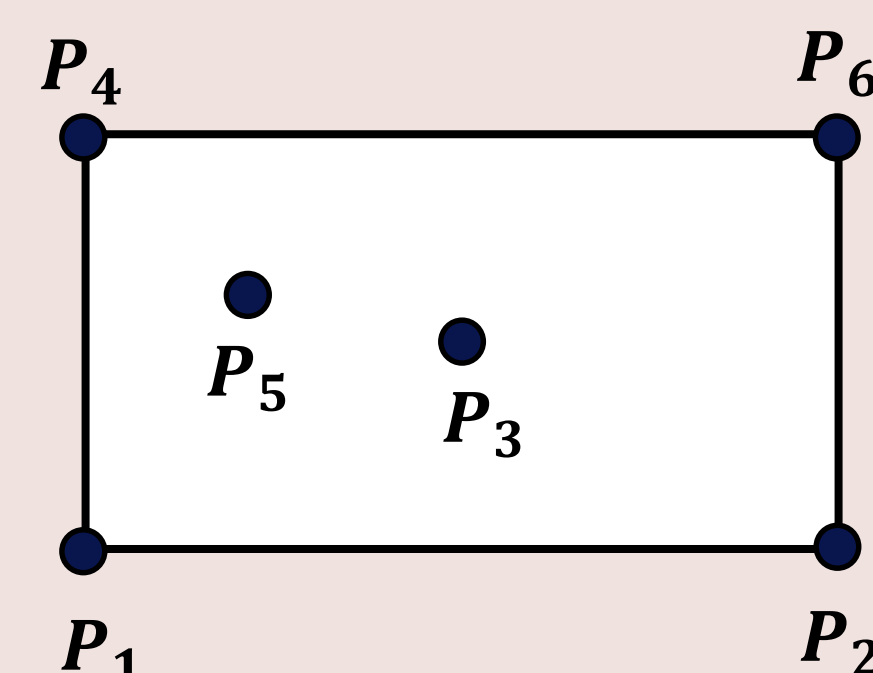
Pointer Networks

Pointer network combines a sequence-to-sequence model with a content-based input attention model. It has the feature of selecting the output from the inputs.

Goal: Find the convex hull

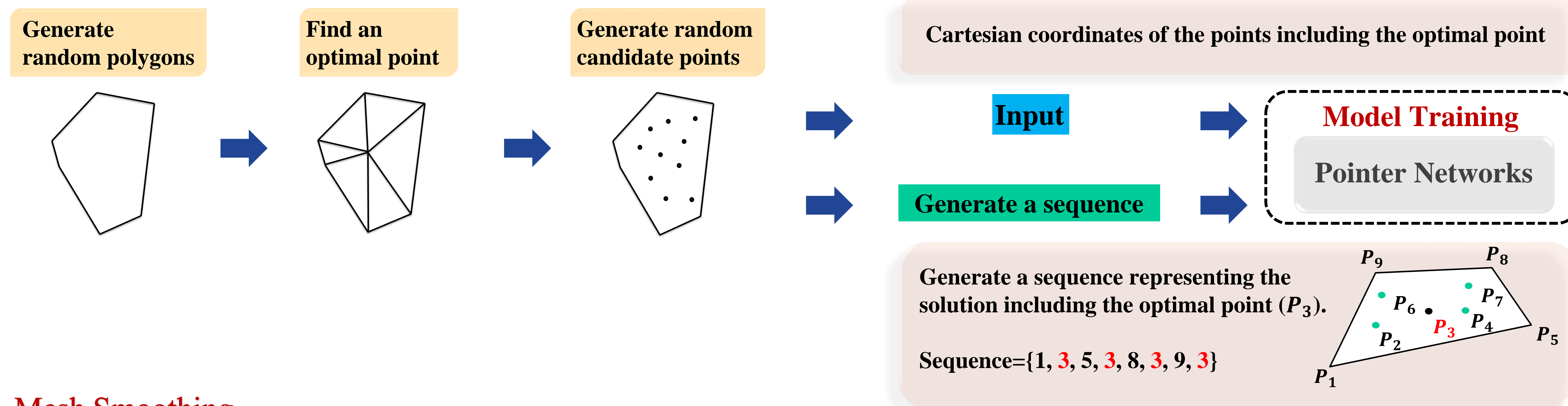
Input: Cartesian coordinates of the points

Output sequence: {1, 2, 6, 4, 1}

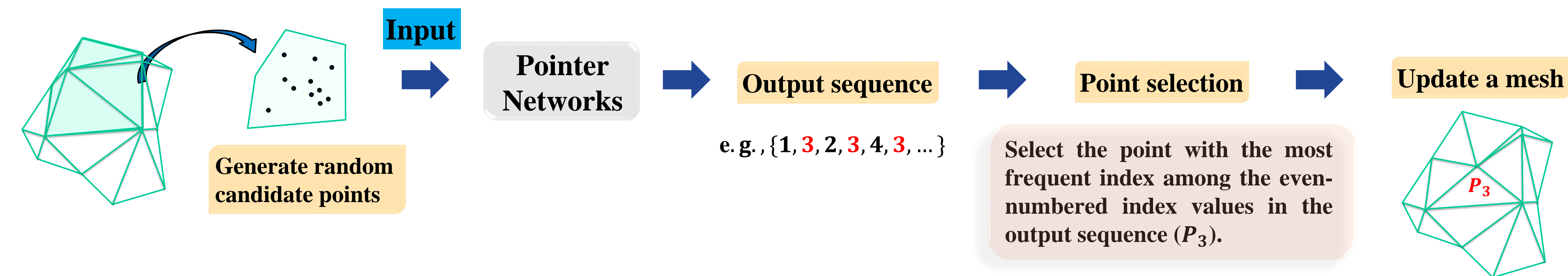


Approach

Model Training



Mesh Smoothing

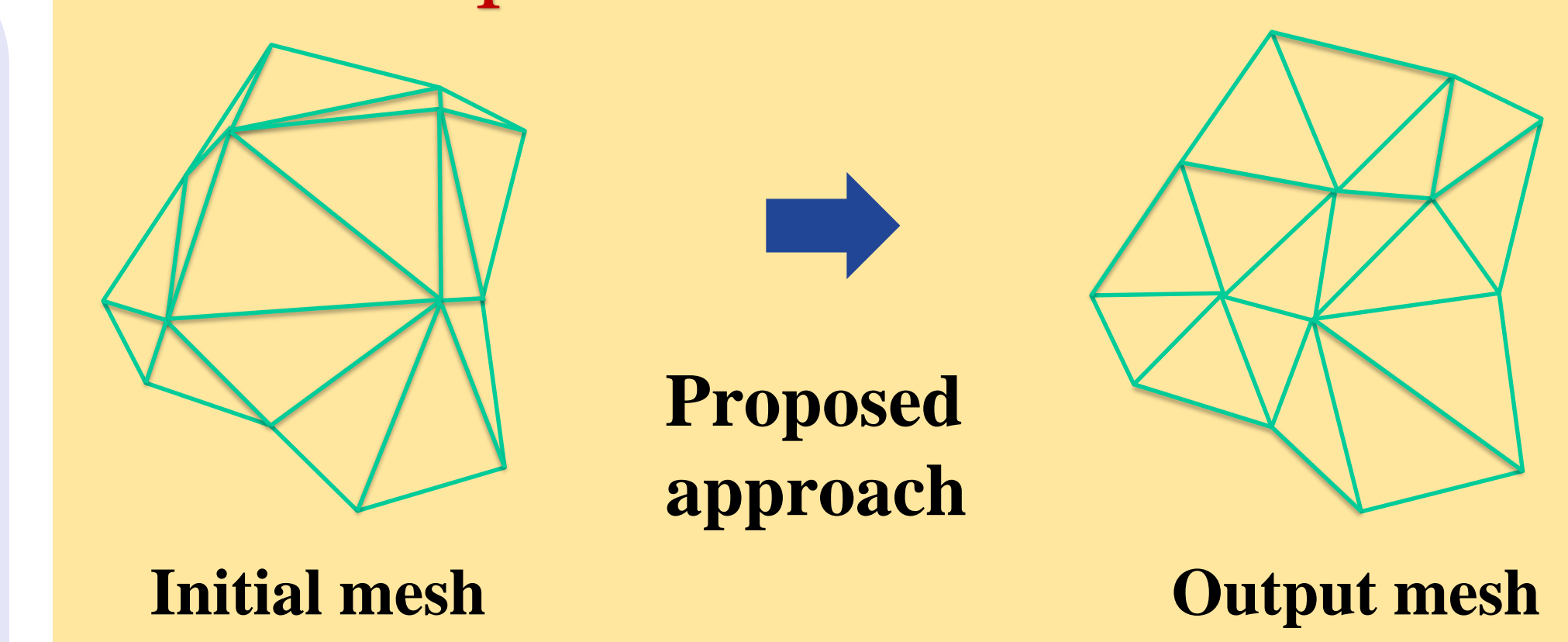


Results

Random Patch Example

Dataset: 3,000 random patches	
Mesh	Average mesh quality
Initial mesh	2.8395
Output mesh (proposed)	1.2609
Output mesh (Mesquite)	1.2514

Real Example



Acknowledgements

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