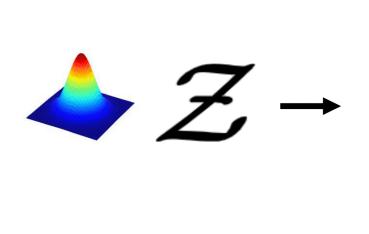
UMass Amherst

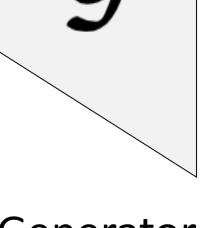
Cross-Modal 3D Shape Generation and Manipulation Zezhou Cheng¹, Menglei Chai², Jian Ren², Hsin-Ying Lee², Kyle Olszewski², Zeng Huang², Subhransu Maji¹, Sergey Tulyakov² ¹University of Massachusetts Amherst ²Snap Inc.

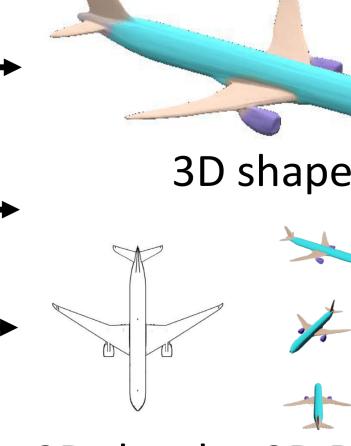
Introduction

> A multi-modal generative model



A Latent space

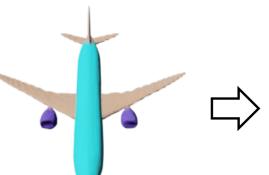




Generator

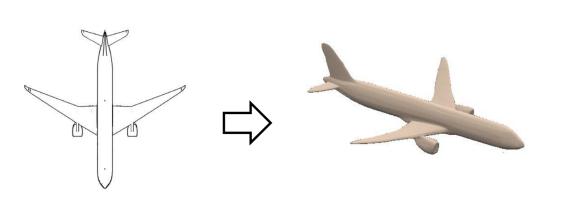
2D sketch 2D RGB views

Versatile 3D generation and manipulation tasks





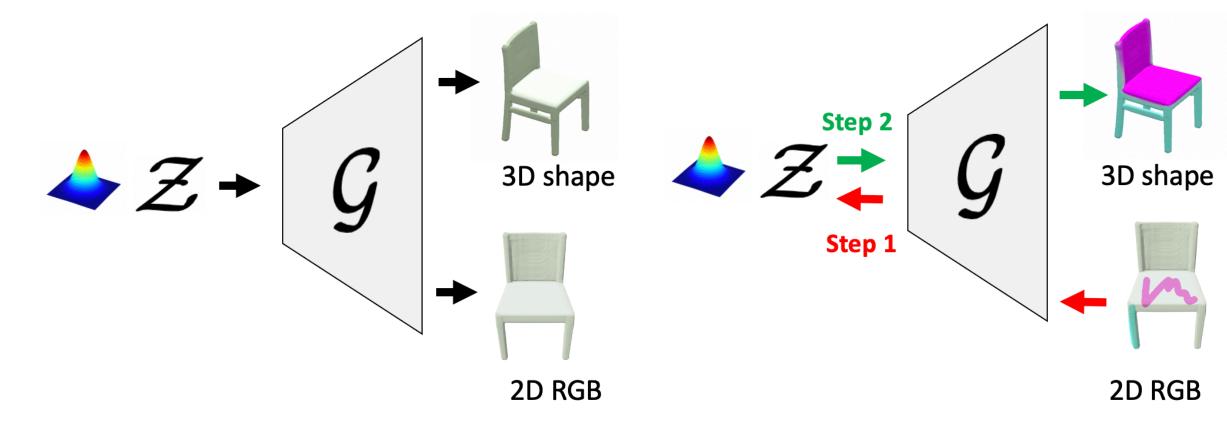
3D reconstruction from RGB



3D reconstruction from sketch

Shape editing via sketch

> A "Swiss knife": latent optimization



Initial state

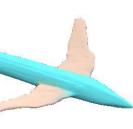
Edit shape with color scribbles

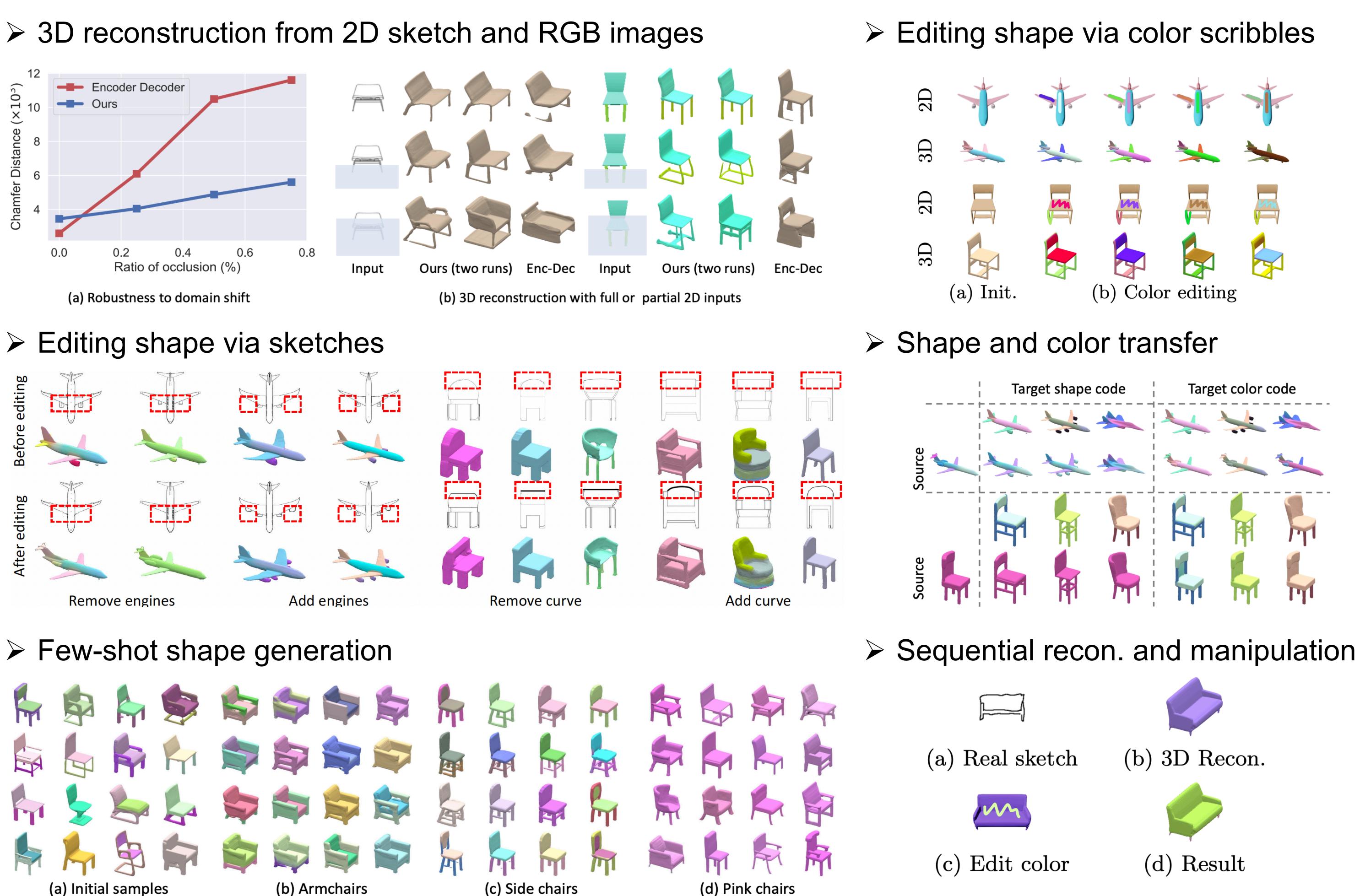


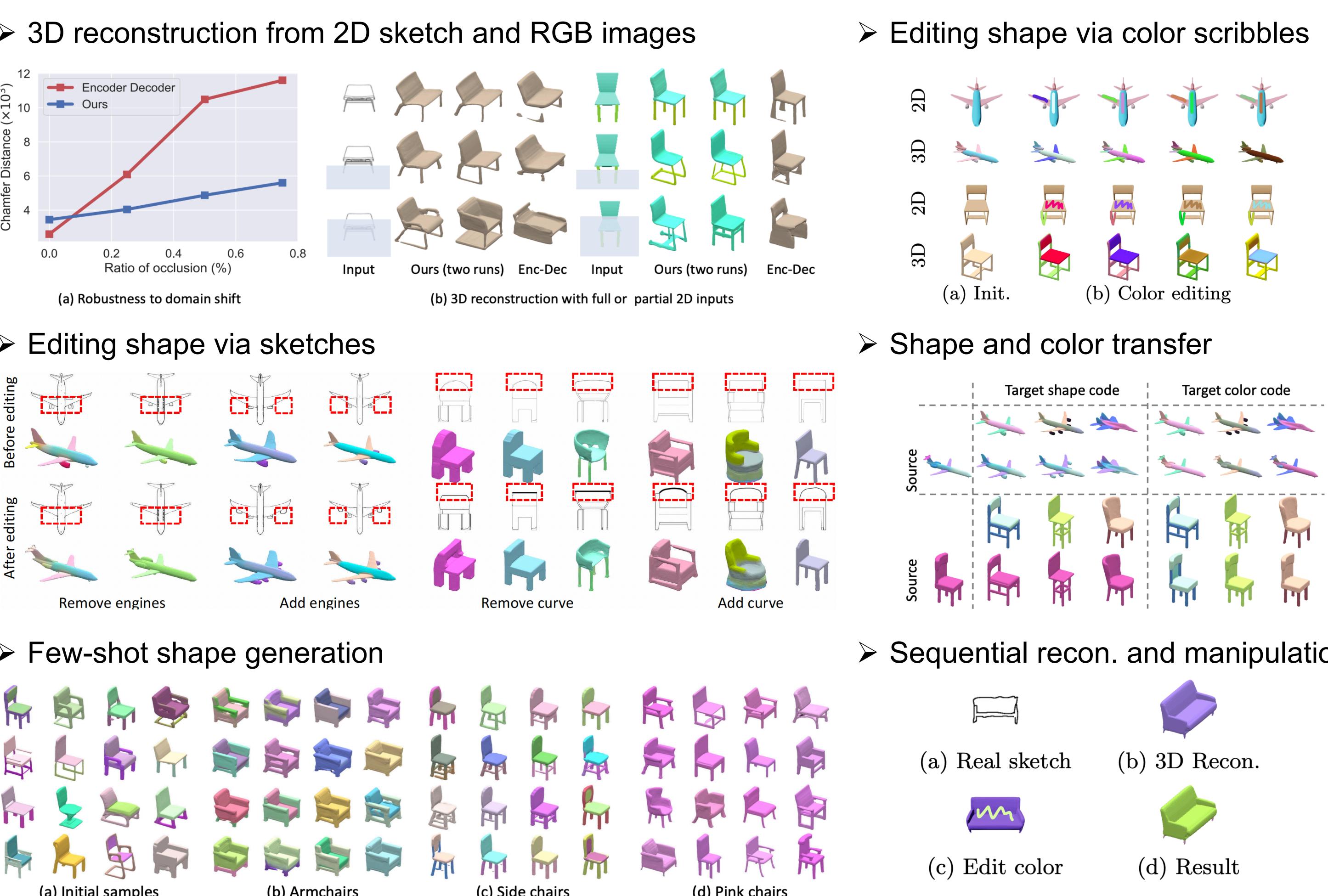


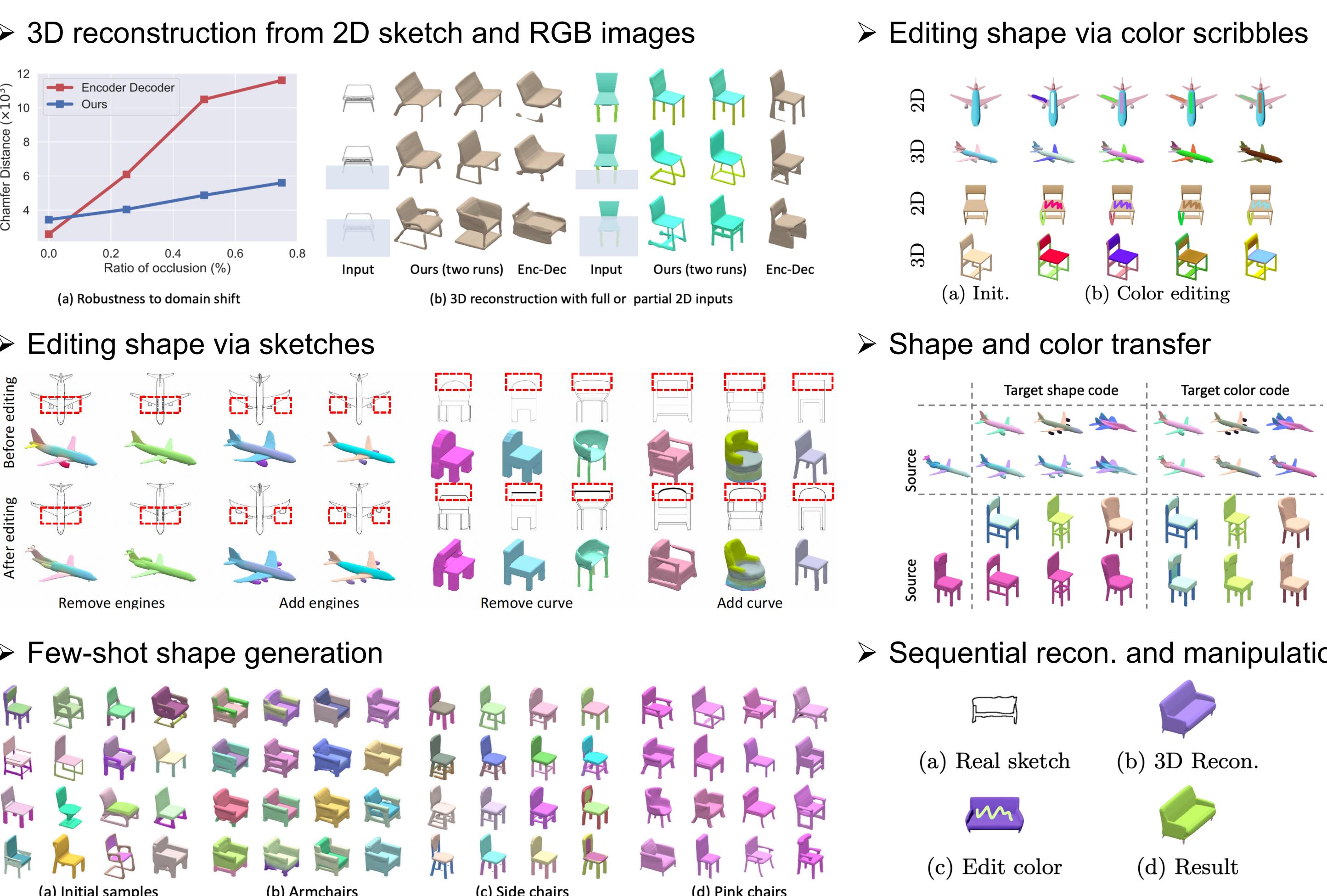


Color editing via scribble









Project website: https://people.cs.umass.edu/~zezhoucheng/edit3d/

Applications

(d) Pink chairs

