Multiview Regenerative Morphing with Dual Flows

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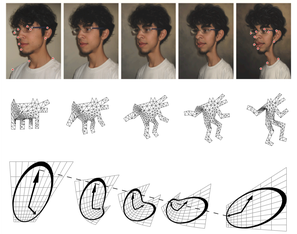
Task

Input
Two sets of unaligned images

Goal
View consistent morphing

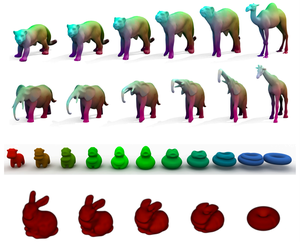
Previous Work

Image Morphing



[Liao et al. 2014, Alexa et al. 2000, Seitz et al. 1996]

Shape Interpolation



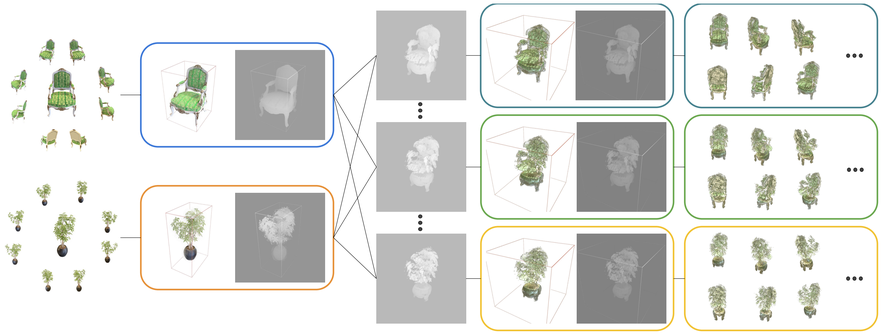
[Eisenberger et al. 2021, Solomen et al. 2015, Janati et al. 2020]

😄 Generate smooth and coherent transitions

😒 Need human annotations and cause view distortion

😄 Generate smooth and view-consistent rendering

😒 Restrict to certain categories or simple geometry with no texture



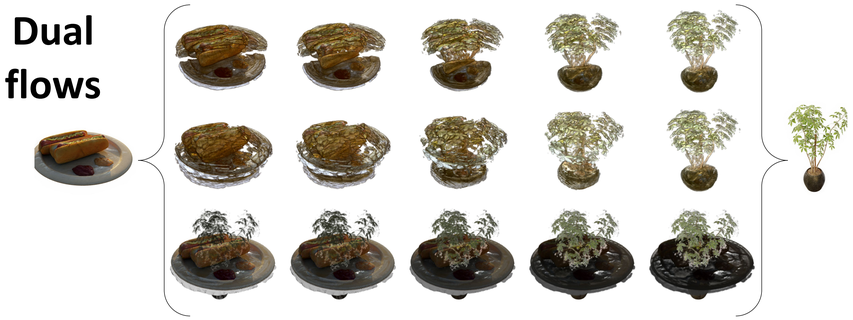
Phase 1

Learn color and shape volumes from multiview images.

Phase 2

Learn optimal transport flow and rigid transformation flow to morph scenes with different weights. Render scenes with color and shape volumes.

Dual flows



😄 Top row morphs with dual flows, preserving source shape during transition.
😕 Middle row morphs without rigid flow, resulting shattered shapes.
😒 Bottom row interpolates with no flows, shown as a baseline.

Results