UNIST: Unpaired Neural Implicit Shape Translation Network

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**INTRODUCTION**

• The first deep neural implicit model for unpaired shape-to-shape translation built on autoencoding neural implicit fields

• Translation network trained on latent grid representation with spatially correlated structure of the input shapes

* UNIST with Position-aware encoding (PE) / Regular encoding (RE)

**METHOD**

Autoencoding

• Learns to encode and decode shapes from both domains using latent grid

• Self-supervised with reconstruction loss

Translation

• Translates the code of source shape to that of target shape using GAN

• Turns the code of target shape to itself based on feature preserving loss

**UNIST vs. RETRIVAL 2D**

Solid → Dotted  Chair → Table  w Armrest → w/o Armrest

Regular → Italic  Regular → Bold

G → R

**AUTOENCODING**

Hooman Shayani  CycleGAN  GANHopper  

Input  LOGAN  CycleGAN  GANHopper  UNIST

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