BEST PAPER AWARD

PREISTRÄGER

»IMPACT ON SCIENCE«

COMPUTER GRAPHICS NIGHT
DONNERSTAG, 2. DEZEMBER 2021

Best Paper Award

Mahajan, Shweta (TU Darmstadt Visual Inference)
Gurevych, Iryna (TU Darmstadt)
Roth, Stefan (TU Darmstadt Visual Inference)

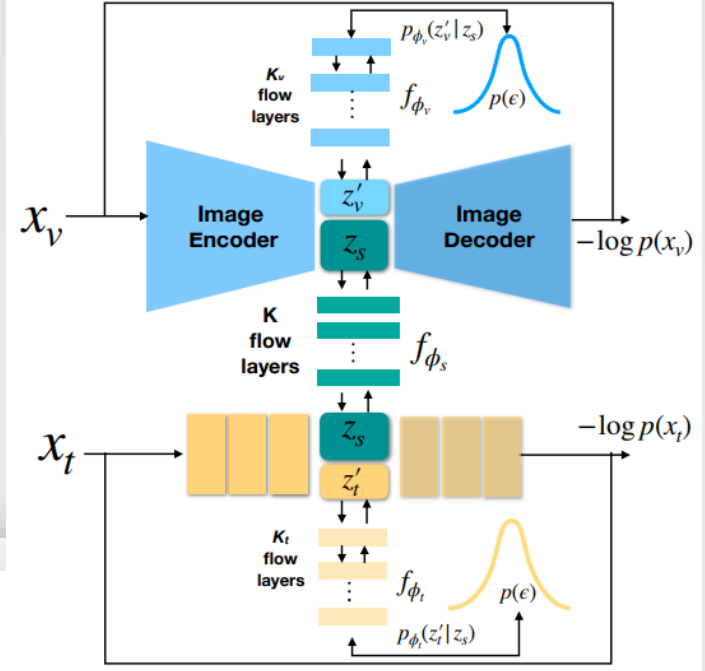»Latent Normalizing Flows for Many-to-Many Cross-Domain Mappings«

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PROBLEM

> Cross Domain tasks
>> Image conditioned text generation
>> Text-conditioned image synthesis
> Learning joint representations of images and text
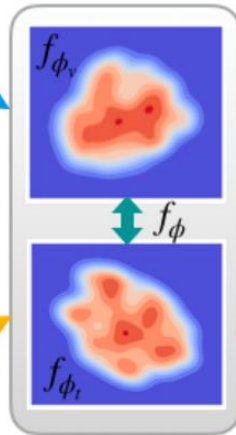

LNFMM architecture

Joint multimodal latent representation

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RESULT

- Latent Normalizing Flows for Many-to-Many Mappings (LNFMM) framework for diverse bi-directional many-to-many mappings
- Captures heterogeneous distributions by leveraging normalizing flows

USP

- Novel latent representation separating
  - Shared cross-domain information
  - Domain-specific information
- Preserves heterogeneous structure of the data in latent space
- Enables highly accurate and diverse generated samples of images or texts

Image	Caption
	• Two elephants standing next to each other in a river.
	• A herd of elephants in a grassy area of water.
	• Two elephants walking through a river while standing in the water.
	• Two elephants are walking and baby in the water.
	• A group of elephants walking around a watering hole.

Generated example captions

Text	Sample #1	Sample #2	Sample #3
A close up of a pizza with toppings			

Generated example captions