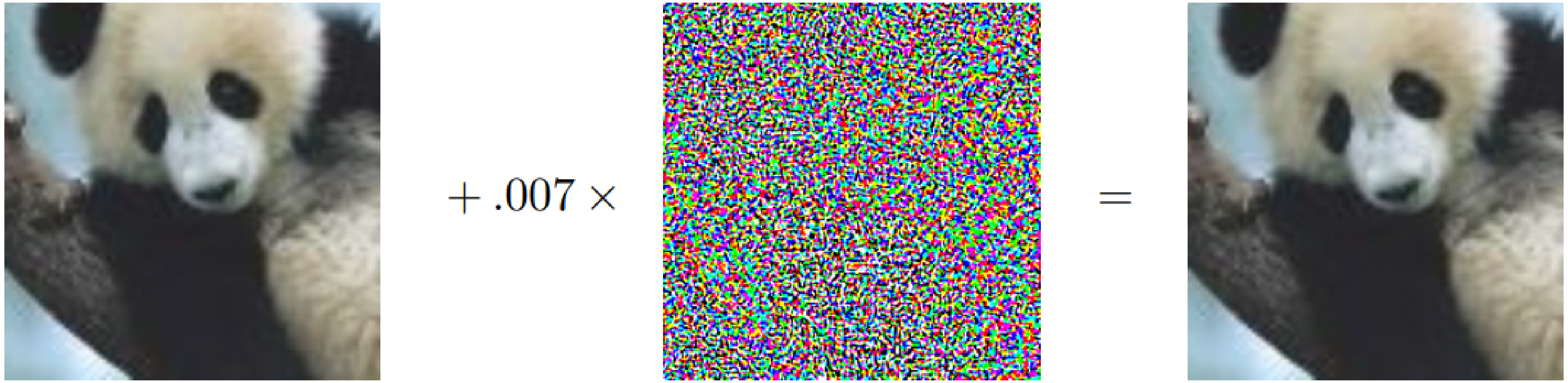
TEL AVIV UNIVERSITY אוניברסיטת תל אביב

3DV 2021
International Conference on 3D Vision
Online, December 1-3, 2021

Geometric Adversarial Attacks and Defenses on 3D Point Clouds

Itai Lang, Uriel Kotlicki, Shai Avidan

Neural Networks are Vulnerable!

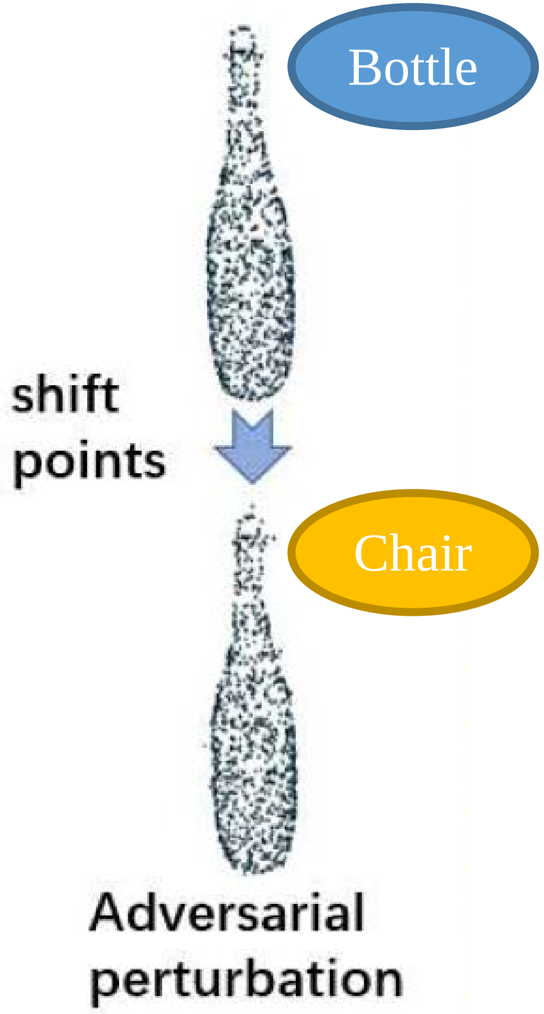


Panda

Perturbation

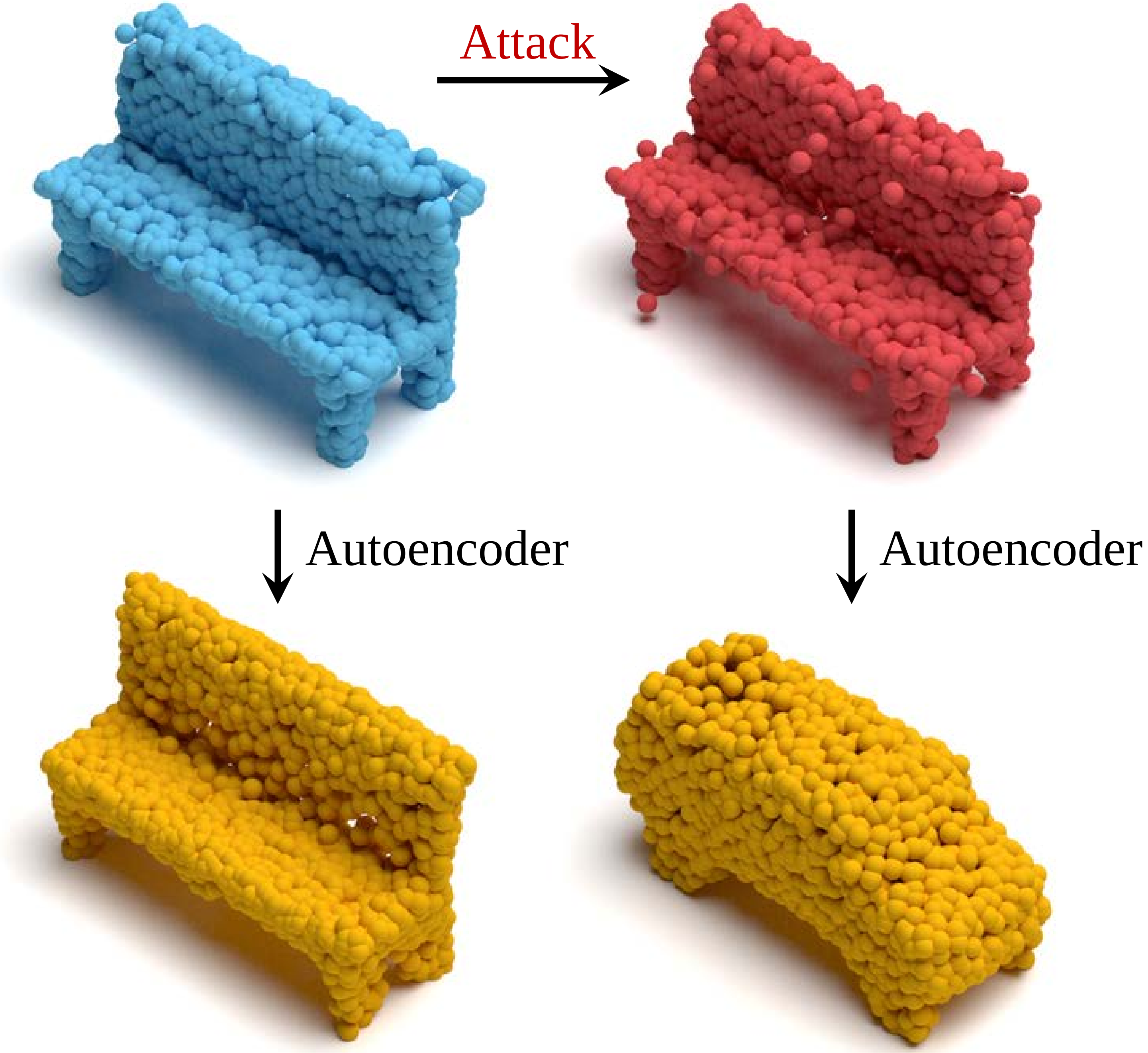
Gibbon

Goodfellow *et al.*, 2015



Xiang *et al.*, 2019

Make a small perturbation to an input point cloud to change the reconstructed geometry by an autoencoder model



Attack

Autoencoder

Autoencoder

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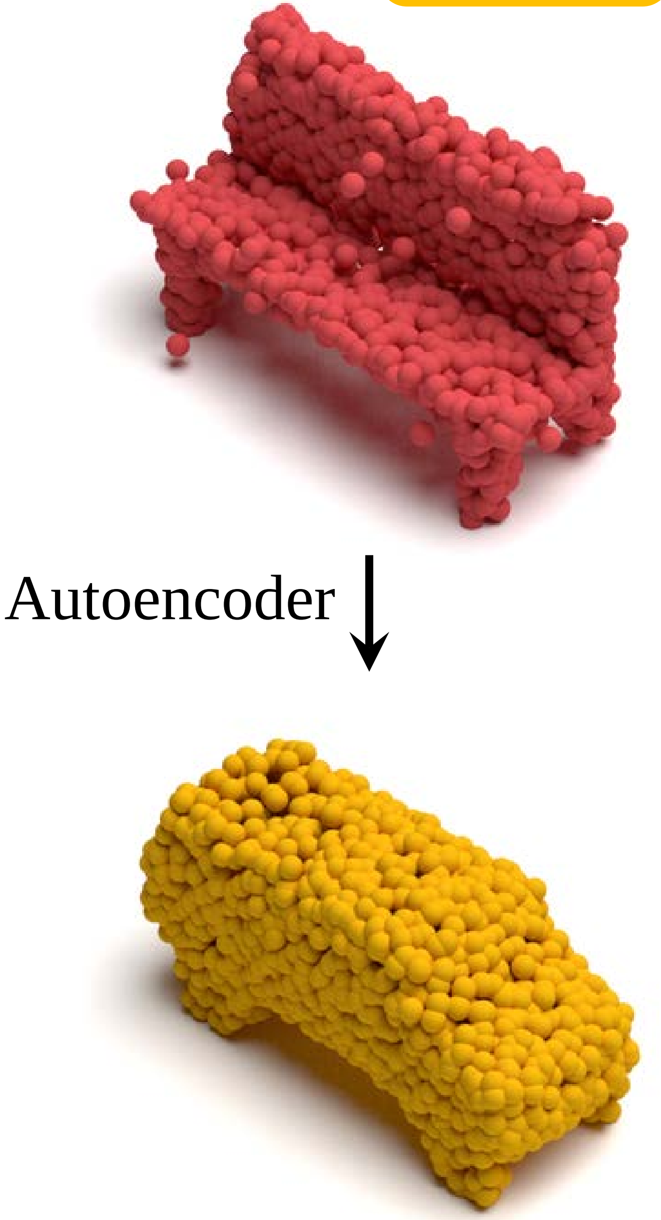
Summary

- Geometric adversarial attack – changes the reconstructed shape
- Not entirely defendable – a residual effect remains
- Paper and code are available – github.com/itailang/geometric_adv

THANK YOU!


Autoencoder