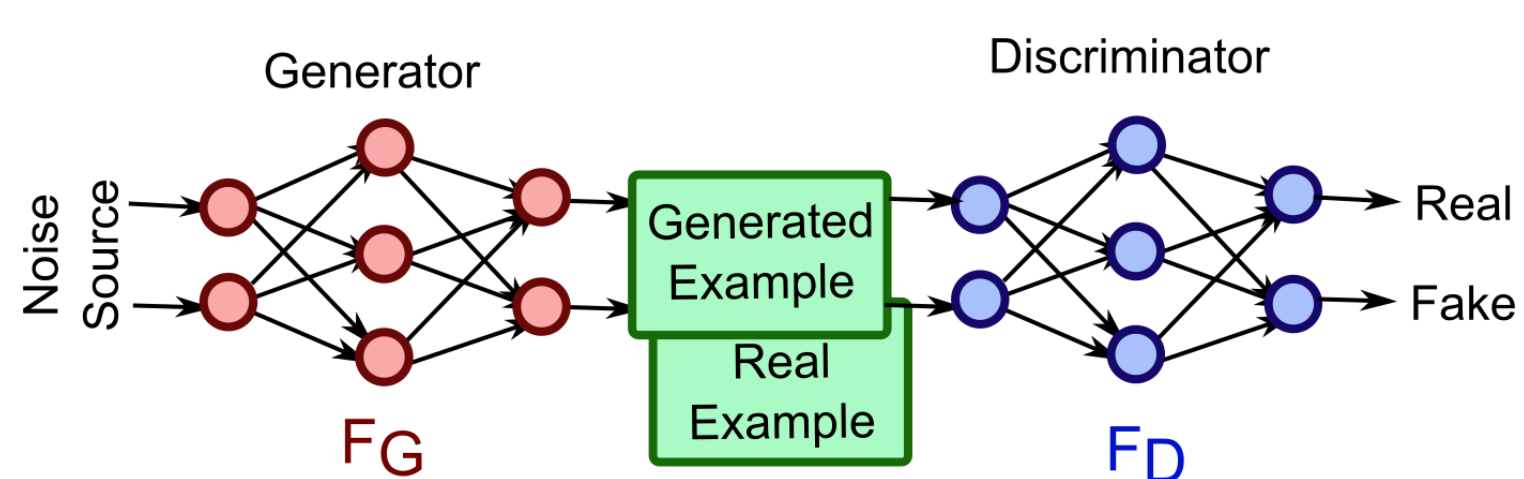


# Geometric View of GAN and Visualization

Zhizhong Li | 1155070507 | Department of Information Engineering

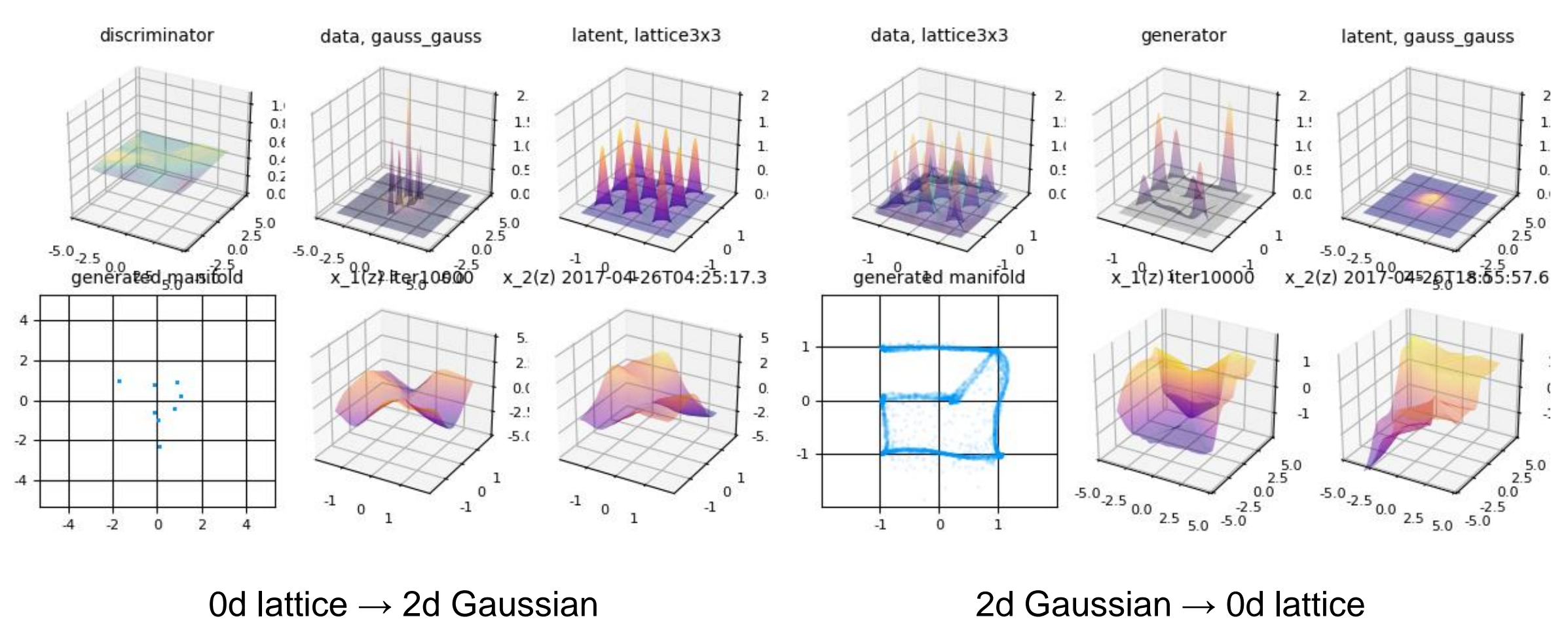
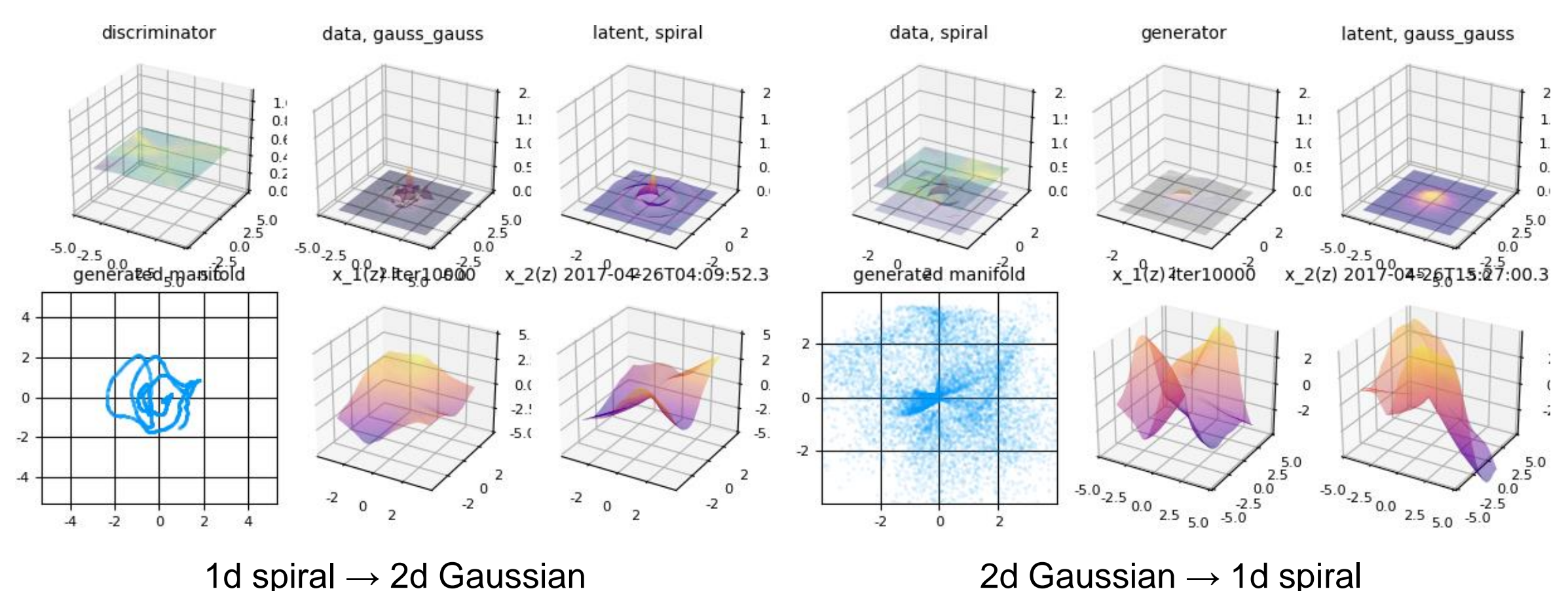
## GAN

- Generative Adversarial Network (GAN), is a powerful generative model and also a hot topic
- It contains two components: a **Generator** and a **Discriminator**
- They compete with each other in the as in game theory

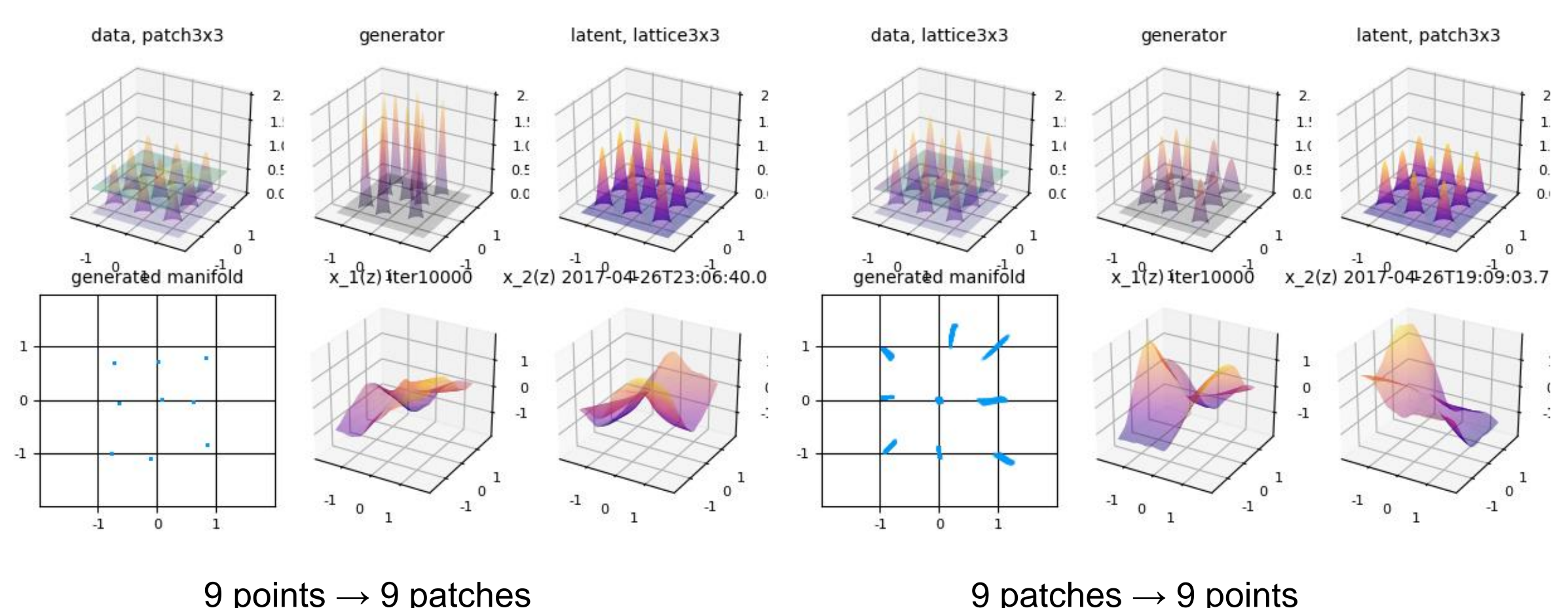
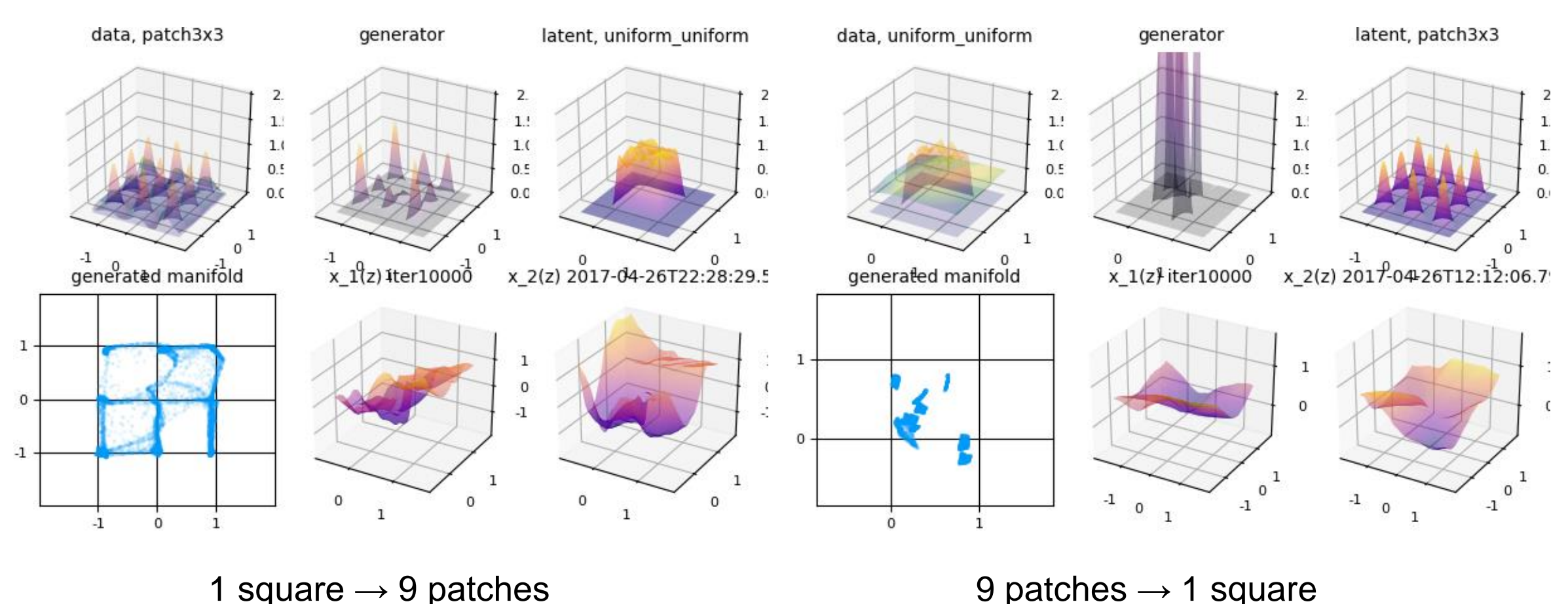


## Visualization

- Dimensionality



- Connectivity



## Geometric View

- GAN is to learn a data manifold
  - Data lie in a manifold
  - Noise is not noise it is coordinate space
  - Decouple Geometry & Distribution
- Impact of geometric property
  - Dimensionality
  - Connectivity

## Experiment

- Use fully connected networks with BN and Elu activation.
- Number of neurons are 20-40-100-200-200-100-40-20