

Learn Latent Representations

Differentiable Relaxations and Reparameterisations

Jonathon Hare

Vision, Learning and Control
University of Southampton

What are differentiable relaxations and reparameterisations?

...and why do we need them?

Aside: continuity, smoothness and Lipschitz

Softmax and Softargmax

Relaxing the L1 norm / distance

Differentiable Sampling

The reparameterisation trick

Sampling from a diagonal-covariance Gaussian

Sampling from a categorical distribution: Gumbel Softmax

The Straight-Through operator

The Straight-Through operator: implementation