Appendix: Ladder Variational Autoencoders



Figure 1: MNIST log-likelihood values for VAEs and the LVAE model with different number of latent layers, Batch normalization (BN) and Warm-up (WU). a) Train log-likelihood, b) test log-likelihood and c) test log-likelihood with 5000 importance samples. Note that the LVAE without batch normalization performed very poorly why some of the results fall outside the range of the plots



Figure 2: OMNIGLOT log-likelihood values for VAEs and the LVAE model with different number of latent layers, Batch normalization (BN) and Warm-up (WU). a) Train log-likelihood, b) test log-likelihood and c) test log-likelihood with 5000 importance samples

30th Conference on Neural Information Processing Systems (NIPS 2016), Barcelona, Spain.

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a)	b)	c)
a)	D)	c)
7/35927/15	7/35927/15	5830387400
16592577/3	16592577/3	8197660819
9/89444737	9/89444737	1892243815
2/54500499	2/54500499	6037655351
324612/30/	324612/301	5067636230
2008979463	2008977	9608238425
4929972607	4929972607	1465239338
6481507293	6481507293	6458710687
3069190505	3069190505	5920548193
1372142457	1372142457	4181877791

Figure 3: MNIST samples. a) True data, b) Conditional Reconstructions and c) Samples from the prior distribution

a)	b)	C)
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Figure 4: MNIST samples. a) True data, b) Conditional Reconstructions and c) Samples from the prior distribution