Project Proposal in ADLR

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We want to study Invertible Neural Networks [1] and compare them with other existing model architectures like conditional Variational Autoencoders (cVAE) [4] or conditional Generative Adversarial Networks (cGAN) [3].

After setting up the architectures we want to evaluate these models based on the simple 2D manipulator. Our ideas for possible future contributions are:

- scaling up the simple 2D manipulator example to 3D space and analyze the suitability of Maximum Mean Discrepancy (MMD) [2]
- replace MMD by other methods for comparing two probability distributions (e.g. trainable discriminator)
- study more complex inverse problems from real-world data
- investigate feasibility of following pre-defined end-effector trajectories by generating smooth and continuous [5] joint movement

References

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