



THE UNIVERSITY OF  
**CHICAGO**

Department of Statistics

MASTER'S THESIS PRESENTATION

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A Variational Auto-Encoder Learning Spatial Transformation  
Equivariance and Invariance

THURSDAY, February 9, 2017, at 12:00 PM  
Jones 308, 5747 S. Ellis Avenue

ABSTRACT

Auto-encoding variational bayes performs efficient inference and learning for a class of probabilistic generative models, in the presence of continuous latent variables with intractable posterior distributions and large datasets. But this model is still limited by the lack of ability to learn spatial transformation equivariance and invariance in an efficient manner. By adding spatial transformer layers in the model, we show that our model learns features equivariant (when reconstructing images) and invariant (when generating images) to translation, rotation and scaling.

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