

# BABAK ESMAEILI

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## PUBLICATIONS

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### Conference

- [1] B. Esmaili, H. Wu, S. Jain, A. Bozkurt, N. Siddharth, B. Paige, D. H. Brooks, J. Dy, and J.-W. Meent. “Structured Disentangled Representations”. In: *The 22nd International Conference on Artificial Intelligence and Statistics*. 2019, pp. 2525–2534.
- [2] B. Esmaili, H. Huang, B. Wallace, and J.-W. van de Meent. “Structured Neural Topic Models for Reviews”. In: *The 22nd International Conference on Artificial Intelligence and Statistics*. 2019, pp. 3429–3439.

### Preprint

- [1] A. Bozkurt, B. Esmaili, D. H. Brooks, J. G. Dy, and J.-W. van de Meent. “Rate-Regularization and Generalization in VAEs”. In: *arXiv preprint arXiv:1911.04594* (2019).

### Workshop

- [1] A. Bozkurt, B. Esmaili, D. H. Brooks, J. Dy, and J.-W. van de Meent. “Can VAEs Generate Novel Examples?” In: *NeurIPS Workshop on Critiquing and Correcting Trends in Machine Learning*. 2018.

## EDUCATION

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**Northeastern University** *2017 – Present*  
PhD, Computer Science  
Advisor: Prof. Jan-Willem van de Meent  
Area: Machine Learning, Deep Generative Models, Probabilistic Programming

**University of Edinburgh** *2016 – 2017*  
MSc, Data Science  
Grade: **Distinction** (above 70%)  
Advisor: Prof. Michael Guttman  
Dissertation: Bayesian Optimization  
Description: Scaling Bayesian optimization for high dimensional likelihood free inference problems.

**University of Edinburgh** *2012 – 2016*  
BSc (Hons), Artificial Intelligence and Computer Science  
Grade: **First Class** (above 70%)  
Advisor: Prof. Michael Herrman  
Dissertation: Particle Swarm Optimization  
Description: Developed several algorithms for exploration of an unknown environment with the goal of finding a pre-specified desired area using multiple small simulated mobile robots.

## EXPERIENCE

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### Teaching Assistant

*2018 – 2019*

CS-7140 Advanced Machine Learning

<https://www.khoury.neu.edu/home/jwvdm/teaching/cs7140/spring2018/>

### Research Assistant

*2014 – 2015*

University of Edinburgh

School of Informatics

Advisor: Prof. Paul Anderson

Project: Social media interaction models for teaching and learning

## REVIEWING

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ICML - Top 33% Reviewer Award

*2020*

NeurIPS - Top 50% Reviewer Award

*2019*

## RESEARCH INTERESTS

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I am interested in deep generative models and how we can guide them towards learning good representations. For similar reasons, I am also interested in representation learning, particularly the approaches that are motivated by information theory. I am also a fan of probabilistic programming which provides exciting opportunities for abstracting probabilistic models, as well as improving efficiency in inference.