

Rob Brekelmans

CONTACT INFORMATION	13337 Beach Ave #205 Marina del Rey, CA 90292	(502) 509-9949 brekelma@usc.edu http://github.com/brekelma
RESEARCH INTERESTS	Information theory, unsupervised learning, disentangled representations, variational inference	
EDUCATION	University of Southern California , Los Angeles, CA, USA <i>Information Sciences Institute / Department of Computer Science</i>	
	Ph.D. Candidate, Computer Science Advisors: Greg Ver Steeg, Aram Galstyan GPA: 3.8 / 4.0	Aug 2016 - Present
	Imperial College London , London, UK	
	M.Sc Computing Science Graduated with Distinction Thesis Advisor: Björn Schuller	Oct 2014 - Oct 2015
	University of Pennsylvania , Philadelphia, PA, USA	
	B.A. Mathematics GPA: 3.81 / 4.0, Summa Cum Laude	2006 - 2010
ACADEMIC EXPERIENCE	Los Alamos National Laboratory , Los Alamos, NM <i>Applied Machine Learning Fellowship</i> • Investigated learning tree structured graphical models with latent variables • Mentors: Marc Vuffray, Andrey Lokhov, Sidhant Misra	
	Information Sciences Institute , Los Angeles, CA <i>DARPA Data Driven Discovery Project</i> <i>Graduate Research Assistant</i> • Automated search over machine learning pipelines for prediction tasks across diverse data settings (AutoML) • Implement ‘primitives’ to be used by the planning system, including semi-supervised dimensionality reduction and graph convolutional networks	
	University of Southern California , Los Angeles, CA <i>Teaching Assistant</i> • CSCI109: Introduction to Computer Science	
ADDITIONAL EXPERIENCE	Susquehanna International Group , Philadelphia, PA <i>Stock Options Trader</i> • Initiated proprietary positions, tuned trading scripts, managed distributional risk	
PUBLICATIONS	Rob Brekelmans, Daniel Moyer, Aram Galstyan, Greg Ver Steeg. “Exact Rate-Distortion in Autoencoders via Echo Noise.” <i>Neural Information Processing Systems</i> , 2019.	
	Ayush Jaiswal, Rob Brekelmans, et al. “Discovery and Separation of Features for Invariant Representation Learning.” <i>In prep</i> , 2019.	

Daniel Moyer, Shuyang Gao, Rob Brekelmans, Greg Ver Steeg, Aram Galstyan. “Invariant Representations without Adversarial Training”, *Neural Information Processing Systems*, 2018.

Shuyang Gao, Rob Brekelmans, Greg Ver Steeg, and Aram Galstyan. “Auto-encoding Total Correlation Explanation”. *AISTats*, 2018.

Yolanda Gil, et al. “P4ML: A Phased Performance-based Pipeline Planner for Automated Machine Learning.” *ICML AutoML Workshop*. 2018.

Greg Ver Steeg, Rob Brekelmans, Hrayr Harutyunyan, Aram Galstyan. “Disentangled Representations Via Synergy Minimization”, *55th Annual Allerton Conference on Communication, Control, and Computing*, 2017.

Rob Brekelmans. “Analyzing the Relationship Between Neural Activity and Facial Movements in Emotional Response”. *MSc Thesis*, Imperial College London, 2015.

PROGRAMMING Python, TensorFlow, Keras, MATLAB, Julia, C++, SQL

COURSEWORK Advanced Topics in Statistical Machine Learning, Advanced Analysis of Algorithms, Information Theory, Convex & Combinatorial Optimization, Algebraic Combinatorics, High Dimensional Statistics & Big Data Problems, Intelligent Data & Probabilistic Inference, Logic-Based Learning

Best Project Award, *Advanced Topics in Statistical Machine Learning* Nov 2018

Deep Reinforcement Learning Bootcamp, *UC Berkeley* Aug 2017