EVAN RACAH

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Current: Montréal, QC ⋄ **Permanent:** Oakland, CA

SUMMARY

I am a **researcher in machine learning** with several years of experience (academic and government research) in applied and basic research.
My research interests are **representation learning, computer vision, reinforcement learning**, and generally **deep learning**.
I have published a couple papers at **NeurIPS**

EDUCATION

Université de Montréal, Mila, Montréal, QC, Canada 2017-Sept 2019 (Expected)
Master of Science, Computer Science
Advisor: Christopher Pal

University of California, Davis, Davis, CA, USA 2009-2014
Bachelor of Science (with honors), Mechanical Engineering
Minor, Computer Science

EXPERIENCE

Research/Data Analytics Engineer, NERSC/Berkeley Lab Aug 2015-Jul 2017

- Developed deep, semi-supervised climate event detection model for climate simulation data
- Implemented unsupervised methods for visualizing High Energy Physics events
- Contributed to a massive scale deep learning training at 10,000 nodes on Cori supercomputer and Spark matrix factorization at 1600 nodes

Undergraduate Research Intern, NERSC/LBL, Berkeley, CA Jan-Aug 2015

- Analyzed multi-node Spark performance for random forests algorithm on protein folding data and randomized linear algebra algorithms.

Undergraduate Researcher, CS Department, UC Davis Mar 2014-Sept 2014

- Created machine learning framework for training and visualizing score prediction for protein folding data in Matlab, then ported it to Python

PUBLICATIONS

Unsupervised State Representation Learning in Atari
E Racah*, A Anand*, S Ozair*, Y Bengio, MA Ct, RD Hjelm
NeurIPS, 2019

Supervise Thyself:Examining Self-Supervised Representations in Interactive Environments
E Racah, C Pal
ICML Workshop on Self-Supervised Learning, 2019

ExtremeWeather: A large-scale climate dataset for semi-supervised detection, localization, and understanding of extreme weather events.
E Racah, C Beckham, T Maharaj, SE Kahou, M Prabhat, C Pal.
NeurIPS, 2017

Deep Learning at 15PF: Supervised and Semi-Supervised Classification for Scientific Data
T Kurth, J Zhang, N Satish, E Racah, I Mitliagkas, MMA Patwary, T Malas.
Supercomputing (SC), 2017

Revealing Fundamental Physics from the Daya Bay Neutrino Experiment using Deep Neural Networks
E Racah, S Ko, P Sadowski, W Bhimji, C Tull, SY Oh, P Baldi.
IEEE ICMLA, 2016

Matrix factorizations at scale: A comparison of scientific data analytics in Spark and C+ MPI using three case studies
A Gittens, A Devarakonda, E Racah, M Ringenburg, L Gerhardt, J Kottalam, J Liu, K Maschhoff, S Canon, J Chhugani, P Sharma, J Yang, J Demmel, J Harrell, V Krishnamurthy, M Mahoney
IEEE Big Data, 2016

Application of deep convolutional neural networks for detecting extreme weather in climate datasets
Y Liu, E Racah, J Correa, A Khosrowshahi, D Lavers, K Kunkel, M Wehner, W Collins
arXiv preprint, 2016

H5spark: bridging the I/O gap between Spark and scientific data formats on HPC systems
J Liu, E Racah, Q Koziol, RS Canon, A Gittens
Cray User Group, 2016

A multi-platform evaluation of the randomized CX low-rank matrix factorization in Spark
A Gittens, J Kottalam, J Yang, MF Ringenburg, J Chhugani, E Racah, M Singh, Y Yao, C Fischer, O Ruebel, B Bowen, N Lewis, MW Mahoney, V Krishnamurthy, Prabhat
IPDPS Workshop, 2016

SELECTED TALKS

Unsupervised State Representation Learning in Atari. July 2019, Mila Tea Talk Seminar Series (with Ankesh Anand)
Machine Learning Tutorial, August 2016, NERSC Data Day 2016
Spark on HPC, June 2016, CS/NERSC Data Seminar Series

SKILLS

Languages: Python, Bash, C/C++
Tools: NumPy, scikit-learn, matplotlib
Frameworks: PyTorch, TensorFlow, Caffe, Theano, Keras, Spark

PROFESSIONAL SERVICE

Reviewer: ICML 2019, NeurIPS 2019

AFFILIATIONS

Tau Beta Pi, Engineering Honors Society, Member, 2014-Present

SELECTED PRESS COVERAGE

A look at deep learning for science, by Prabhat. O'Reilly. April 3, 2017.
Berkeley Lab Staff to Participate in Major Machine Learning Conference, NERSC Center News. December 1, 2017

LANGUAGES

English (native), French (intermediate), Spanish (intermediate, but rusty)