Evan Kriminger
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Skills

Machine learning

- 8 years experience with computer vision, deep learning, generative models, Bayesian inference, reinforcement learning, kernel methods, active learning, and unsupervised learning.

Software: github.com/ekrim
Python - TensorFlow, PyTorch (**daily**)
C++ - OpenCV (**occasional**)

Experience

Senior Machine Learning Engineer October 2017 - Present
ZestFinance, Los Angeles, CA

- Led research of novel explainability tools for machine learning models in credit scoring.
- Implemented normalizing flow models and variational autoencoders in PyTorch. Developed prototype applications which detect and manipulate semantic meaning in latent space.
- Chief architect of explainability library used internally and delivered to clients. Built company's infrastructure for training and explaining deep neural networks in TensorFlow.

Machine Learning Engineer February 2016 - August 2017
Leap Motion, San Francisco, CA

- Conducted computer vision and machine learning research for real-time hand tracking, hand-object interaction, and visual odometry.
- Built systems for automated training and evaluation of TensorFlow and Theano models on the cloud. Developed user-friendly Python tools for manipulating, analyzing, and visualizing large datasets (50GB+).
- Developed research project roadmaps, managed machine learning repo used by the tracking team, and provided machine learning mentorship to software engineers.

Research Assistant Fall 2010 - December 2015
University of Florida, *Computational NeuroEngineering Laboratory*
Advisor: Dr. José C. Príncipe

Funded Projects

Design of ATR Systems with Humans in the Decision Loop **Office of Naval Research**

- Developed semi-supervised clustering and active learning algorithms for sonar processing. Presented work at three program reviews and delivered code to the ONR Panama City Division.

Anomaly Detection in Multivariate Data Streams using Kernel Methods **HP Labs**

- Designed algorithms for anomaly detection in oil wells using time-frequency spectral methods and time domain feature extraction. Delivered implementations for HP's Live Operational Intelligence demo.

Education

Ph.D Electrical and Computer Engineering Fall 2015
University of Florida Gainesville, FL

B.S. Engineering Science, *summa cum laude* Spring 2009
University of Miami, GPA: 3.92 Coral Gables, FL
Mathematics and physics minors

Selected First Author Publications (see **ekrim.github.io** for full list and code)

- *An Effective and Robust Method for Active Constrained Clustering*
  University of Florida dissertation
- "Online active learning for automatic target recognition"
  IEEE Journal of Oceanic Engineering, Aug. 2014
- "Metric learning for invariant feature generation in reinforcement learning"
  1^{st} *Multidisc. Conf. on Reinforcement Learning and Decision Making*, Oct. 2013
- "Nearest neighbor distributions for imbalanced classification"
  IEEE Int. Joint Conf. on Neural Networks, June 2012
- "Markov chain model of HomePlug CSMA MAC for determining optimal fixed contention window size"
  IEEE Int. Sym. on Power Line Communications and its Applications, Apr. 2011

Patents

- U.S. Patent 20,130,069,786 "Detecting regime change in streaming data"
- U.S. Patent 20,130,085,715 "Anomaly detection in streaming data"
- U.S. Patent 20,140,032,450 "Classifying unclassified samples"