

Evan Kriminger  
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## Skills

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10 years of experience in software engineering and algorithm design for deep learning, signal processing, and estimation. I specialize in computer vision and tracking problems.

Languages: **C++**, **Python** (github.com/ekrim)  
Libraries: OpenCV, TensorFlow, PyTorch

## Experience

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**Motion Scientist** November 2018 - Present  
Apple Inc., Cupertino, CA

- Developed algorithms for IMU processing and motion tracking on the CoreMotion team.
- Delivered production code running on millions of iPhones and Apple watches.
- Built infrastructure to run simulations and analysis on hundreds of hours of user data.

**Senior Machine Learning Engineer** October 2017 - November 2018  
ZestFinance, Los Angeles, CA

- Chief architect of explainability library used internally and delivered to clients. Built company's infrastructure for training and explaining deep neural networks in TensorFlow.
- Led research and prototype development of normalizing flow models and variational autoencoders for model fairness products.

**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 cloud-based training and evaluation of TensorFlow and Theano models, along with data pipelines for large datasets (50GB+).

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

- First or co-author of 13 peer-reviewed publications on topics such as EEG signal processing, reinforcement learning, metric learning, imbalanced classification, and active learning.
- Led HP Labs-funded project for oil pipelines anomaly detection and an Office of Naval Research-funded project for sonar object detection.

## Education

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**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

Selected First Author Publications (see [ekrim.github.io](https://github.com/ekrim) for full list and code)

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- *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<sup>st</sup> 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

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- 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”