

# PATRICK LAVICTOIRE

patricklavic@gmail.com

<https://www.patricklavictoire.com>

<https://www.linkedin.com/in/patricklavictoire>

## EXPERIENCE

---

**Machine Learning Manager, Upstart** 2022 - 2023

- I led the ML Partnerships team, which generates loan terms advertised on partner sites (like Credit Karma, LendingTree, NerdWallet, etc) by modeling the terms an applicant would get on-site (but using only the features available to Upstart via the partner site), and thereby drives a substantial part of Upstart's revenue.

**Machine Learning Engineer / ML Engineering Manager, Apple** 2020 - 2022

- I worked on an excellent team tasked with protecting the integrity of Apple's knowledge and answers, in a world rife with vandalism, misinformation, bias, and other hazards. I began as an IC and then found myself proudly managing some excellent ML engineers.

**Research / Data Scientist, Lyft** 2017 - 2020

- I built machine learned models for production, and helped construct the process around each model. On the Locations team, I defined new metrics for probabilistic models and built the first end-to-end trained model for a particular domain. Then on the Integrity team, I developed and updated ML models to catch fraudulent behavior, and I identified and mitigated a significant (previously untracked) vector of fraud.

**Research Fellow, Machine Intelligence Research Institute (MIRI)** 2015 - 2017

- MIRI does theoretical work on the foundations of artificial intelligence, seeking a framework for reliably beneficial AI. I published several papers with them on topics in decision theory and machine learning, and also led a series of research workshops for participants in academia and industry, leading to a large amount of original work and several new hires.

**Principal Engineer, Quixey** 2013 - 2014

- Quixey was an app search startup. My role was that of an ML engineer and general mathematical consultant; I updated the training target and data, improved accuracy dramatically while simplifying the model architecture, developed new features, and successfully pushed for the company's first responsible data collection policy.

**Visiting Assistant Professor, University of Wisconsin–Madison** 2010 - 2013

- This was a three-year postdoctoral position in pure mathematics. I published research in harmonic analysis, maximal inequalities, and ergodic theory; and I taught 8 courses at the undergraduate level.

## LANGUAGES AND LIBRARIES

---

Python and the usual suspects (numpy, pandas, scikit-learn, TensorFlow, Keras), SQL in various forms

## EDUCATION

---

**PhD (Mathematics), University of California at Berkeley**

2005-2010

- Advisor: Michael Christ

**BA (Mathematics), University of Chicago**

2001-2005

## SELECTED PUBLICATIONS AND GRANTS

---

**Alignment for Advanced Machine Learning Systems**

- (preprint, 2016)  
With Jessica Taylor, Eliezer Yudkowsky, and Andrew Critch.

**Program Equilibrium in the Prisoner's Dilemma via Löb's Theorem**

- Workshops at the Twenty-Eighth AAAI Conference on Artificial Intelligence (2014)  
With Benja Fallenstein, Eliezer Yudkowsky, Mihaly Barasz, Paul Christiano, and Marcello Herreshoff.

**Multivariable averaging on sparse sets**

- Transactions of the AMS 366 (2014), 2975-3025  
With Andrew Parrish and Joseph Rosenblatt.

**National Science Foundation, Analysis Grant DMS-1201314**

2012-2013

**Pointwise Convergence for Subsequences of Weighted Averages**

- Colloquium Mathematicum 124 (2011), 157–168

**Universally  $L^1$ -Bad Arithmetic Sequences**

- Journal d'Analyse Mathématique 113 (2011, no. 1), 241–263

**An  $L^1$  Ergodic Theorem for Sparse Random Subsequences**

- Mathematical Research Letters 16 (2009), no. 5, 849–859.