

# Ian Hardy

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## Professional Experience

Loviaco

LOS ANGELES, CA

### Data Scientist

Aug '20 – Present

- Leading the development of ML-powered mortgage servicing tools and hands off modeling capabilities. These include models for book management, retention, customer segmentation, product offering, and data ingest.

Zest AI (formerly ZestFinance)

BURBANK, CA

### Data Scientist

Feb '19 – Apr '20

- Lead development of two credit underwriting models for mid-market auto lenders. Responsibilities included data acquisition, target generation, model development, explainability analysis, and robustness testing.
- Executed client-facing deliverables, including: guides for developing user intuition around our core technology, walkthroughs of experiments conducted by the modeling team, summary recommendations based on the modeling team's findings, and model risk management (MRM) documentation.
- Developed tools for automatically distilling explainability outputs into human-interpretable, actionable results using a novel graph-based approach. Integrated this software offering into the broader company toolkit, saving hundreds of man hours.
- Created a recursive means of tracking feature transformations throughout the modeling process to provide accurate feature definitions for MRM documentation.

### Data Science Intern

Jun '18 – Aug '18

- Designed a sparse clustering metric on feature attributions to provide confidence estimates on model predictions

Search Strategy Solutions

SAN FRANCISCO, CA

### Business Analytics Intern

Jun '17 – Jun '18

- Automated invoice generation to eliminate manual bookkeeping processes.
  - Analyzed market trends to generate potential verticals and client leads.
  - Composed email campaigns with an average 50 percent open, 5 percent response rate.
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## Education

University of California, Santa Cruz

SANTA CRUZ, CA

### Master's, Computer Science & Engineering

Sep '21-Jun '23 (Expected)

Relevant courses in Algorithmic Analysis, Machine Learning, AI, Programming Languages and Data Management. 4.0 GPA.

### BA, Computer Science & Statistics

Dec '18

Relevant courses in Classical and Bayesian Inference, Numeric Approximations, Algorithmic Analysis, Database Systems, Network Systems, and Mobile Development. 3.49 GPA.

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## Skills & Certifications

**Technical Specialties:** Python – NumPy, Pandas, scikit-learn, Tensorflow, PyTorch, XGBoost, NLTK/spaCy, matplotlib–R, SQL, C++, Java, Matlab, LaTeX

**Languages:** English (fluent), Spanish (conversational)

**Certifications:** Machine Learning Online- Stanford (Jul 2020)

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## Projects

**Exploring Adversarial Explanations** Implementations of the 2019 paper [Explanations Can Be Manipulated and Geometry is to Blame](#) as well as the popular 2017 paper [Axiomatic Attribution for Deep Networks](#). Demonstrates the use of a deep network explainer in the context of a computer vision problem, and how adversarial examples to these explanations can be identified.

**A Study on Fair Robust Modeling** Implementation of the 2020 paper [To be Robust or to be Fair: Towards Fairness in Adversarial Training](#). Identifies unfairness resulting from Adversarial Training procedures, and implements an iterative retraining algorithm for combating this bias. Submitted to the 2021 ML Reproducibility Challenge.

**Emojithon** My very own programming language! Emojithon supports everything you need in a PL, from variable assignment, to data structures and control statements, to both user-defined and built-in functions.