ROMAIN L. HARDY

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Summary

I am a graduate of UC Berkeley with degrees in mathematics and astrophysics. I am passionate about data science and statistical modelling, especially probabilistic machine learning. I have experience programming, teaching students, and working with laboratory equipment. After graduating, I interned at NASA Ames Research Center, where I built predictive models to detect anomalies in air traffic systems. I am currently working as a machine learning engineer at Holy Grail, a start-up in the Bay Area that develops automated probabilistic tools to solve optimization problems. I am interested in opportunities regarding applied data science and machine learning.

Education

University of California, Berkeley *2015 – 2019*
BA of Mathematics and Astrophysics

Coursera *2019 – 2020*
AWS Fundamentals Specialization
Bayesian Statistics
Deep Learning Specialization
Divide and Conquer, Sorting and Searching, and Randomized Algorithms
Graph Search, Shortest Paths, and Data Structures
Probabilistic Deep Learning with TensorFlow 2
Scalable Machine Learning on Big Data using Apache Spark
SQL for Data Science

Skills

Computer Science and Machine Learning
Python, TensorFlow, Keras, PyTorch, Scikit-Learn, Apache Spark, Java, LaTeX, MATLAB, C

Foreign Languages
Fluency in French (native tongue) and Spanish (4 years of experience)

Experience

Holy Grail, Inc. *2020 – present*
Remote, Redwood City
I build automated probabilistic machine learning tools for experiment design, feature prediction, and data imputation. Our clients are interested in solving optimization problems to improve efficiency and reduce costs. The software I develop automates every step of the machine learning process, from parameter tuning to model training to deployment—the client only needs to supply data and a target objective. The types of models I have implemented include deep Bayesian neural networks, Gaussian processes, and adaptive networks.

NASA *2019 – 2020*
NASA Ames Research Center, Mountain View
I evaluated the effectiveness of machine learning in detecting in-flight anomalies such as sudden changes in velocity, position, and altitude. I built my code in Python, using Pandas to manipulate data and Scikit-Learn to create predictive models—support-vector machines, naive Bayesian

classifiers, gradient-boosted decision trees, time series models, and neural networks. Ultimately, I was able to detect anomalies in real and synthetic flight data with more than 90% confidence. I authored an informal paper describing my results, which I presented to a senior research group.

Undergraduate Research *2018 – 2019*

University of California, Berkeley

I created a functional particle-in-cell Python code under the guidance of Sasha Philippov and Kyle Parfrey. This code simulates the electromagnetic interactions of particles at high temperatures and velocities. I was also a member of Alex Filippenko's research group, which aims to identify and observe supernovae. Every week, I reviewed KAIT images to filter new supernova candidates from optical junk, asteroids, and variable stars. Over the course of one year, I discovered two new transients, 2018dem and 2018gwp.

SGSE Internship *2014*

Stanford University, California

I worked as a developer on SMILE, the Stanford Mobile Inquiry-based Learning Environment. Over the course of three months, I familiarized myself with JavaScript and revised the website's backend, including the creation of user accounts and groups.

Awards

Term Honor: Honors to Date *2016 – 2019*
Term Honor: Dean's List *2015, 2017*
National Merit Scholarship *2015*

Interests

I enjoy reading graphic novels, exercising, and playing computer games. I also like writing articles on Medium about topics in data science, and participating in Kaggle competitions.