FRANCISCO GUTIERREZ

San Francisco, CA, USA • freefrancisco@gmail.com • https://www.linkedin.com/in/francisco/

SUMMARY

Profile: Experienced software developer and data scientist with strong math background. Experience in machine learning and statistics, currently interested in deep learning, Haskell, and bioinformatics.

Languages: Python, Ruby, Haskell, Coffeescript, Octave/Matlab, R, Elixir, SQL, Cypher, Scheme, LISP, Julia, Javascript, Java, C, C++.

Technologies: Numpy, Pandas, Scikit-learn, Tensorflow, Keras, Jupyter notebooks, Rails, Redis, Phoenix, Flask, Node, Meteor, Mongo, Neo4j, MySQL, PostgressDB, Hadoop, Hive, Pig, Git, agile methodology, RSpec/BDD, Functional Programming, Object Oriented programming.

Specialties: Data science, backend development, machine learning, statistics, neural networks.

WORK EXPERIENCE

CollabRx • ***Software Architect*** • **Feb 2016 - Nov 2016**

- Designed and developed knowledge management system for precision medicine cancer treatment recommendations.
- Developed in graph database Neo4j, prototyped in Python, wrote production code in functional language Elixir with the Phoenix web framework.

Gumroad • ***Risk Engineer, Data Scientist*** • **Dec 2014 - Oct 2015**

- Main developer and maintainer of machine learning application for risk scoring and fraud detection.
- Developed in Python with Scikit-learn, Pandas, Numpy, Jupyter notebooks, and Flask.

Liquid Labs (now Gigster) • ***Co-founder, CTO*** • **Oct 2012 - Oct 2013**

- Developed prototypes for all business ideas, including a contact management tool, a date coaching app, an online expert exchange, and an investment game.
- Developed using Mongo, Node, Javascript, Coffeescript, and Meteor.

Tapjoy • ***Senior Software Engineer, Data Scientist*** • **Oct 2011 – Jul 2012**

- Developed collaborative filtering model to recommend mobile apps and deployed it on Rails backend.
- Developed Ruby A/B testing framework.
- Used Octave, R, Hadoop, Pig, Hive, Ruby and Rails.

Kabam • ***Lead Backend Engineer*** • **Jan 2011 – Oct 2011**

- Lead backend developer for game Dragons Of Atlantis.
- Used Ruby, Rails, MySQL, and Redis.

BieMedia • ***Senior Software Engineer*** • **Jan 2010 – Jan 2011**

- Developed web and command line applications for order management, data scraping and aggregation, process management, automated link clicking, search, and automated video generation.

Inspekt Security • ***Principal Scientist*** • **Jul 2007 – Apr 2008**

- Developed statistical pattern recognition software to detect hacking attempts in computer systems from abnormal activity patterns.

Collective Intellect • ***Co-founder, Director of Research*** • **Apr 2005 – Sep 2006**

- Developed statistical language processing software to score sentiment and discover topic clusters in message board posts and blogs, and link analysis software to discover opinion leaders in social media, blogs, message boards, and other implicit graphs online.
- Developed financial software to extract implied volatility from historical option chain prices, and statistical software to find correlations between sentiment index and financial metrics.

Dante Group / webMethods • ***Senior Software Engineer*** • **Sep 2002 – Apr 2005**

- Developed analysis engine for Business Activity Monitoring / Business Intelligence product at the software startup Dante Group later acquired by webMethods.
- Developed pattern recognition software to predict failures in corporate systems and processes.
- Developed real time OLAP system for analysis of historical data.

Quark • ***Product Manager*** • **May 1999 – Sep 2000**

- Developed collaborative filtering engine in Perl for personalized recommendation engine for movies, restaurants, and targeted advertising. Managed the team that rewrote it in Java.
- Managed a four people team, wrote business plan, pitched product to clients.

MicroStrategy • ***Associate*** • **Jun 1997 – May 1999**

- Participated in Associate program where recent graduates rotated through different company functions after a 6 week boot camp on Data Warehousing and Decision Support Systems.

First Quadrant LLP • ***Researcher, Data Analyst*** • **Summer 1995, Oct 1996 – Mar 1997**

- Wrote Perl scripts to analyze stock market data for financial research.
- Wrote genetic algorithms in C++ during summer research internship.

EDUCATION

Caltech • ***B.S. (1) Engineering & Applied Science, (2) Economics*** • **1992 – 1996**

- Double major with emphasis in physics, applied math, computer science, and economics.
- Coursework included classical, statistical, and quantum mechanics, electromagnetism, relativity, thermodynamics, physics research, chemistry, biology, computer science, circuit design, linear systems analysis, signal processing, vector and multivariate calculus, probability, statistics, linear and abstract algebra, differential equations, real and complex analysis, microeconomics, macroeconomics, econometrics, political science, cooperative and non-cooperative game theory, corporate finance, accounting, option pricing theory, stochastic calculus, investment analysis, and laboratory work in electrical, mechanical, computer, and software engineering.
- Research work included developing molecular dynamics simulations in C for the physics department, and genetic algorithms in C++ for internship through the economics department.

ITESM • ***M.S. Computer Science / Intelligent Systems*** • **2001 – 2002**

- Computer science program focusing on practical applications of artificial intelligence, machine learning, robotics, and automation in general.
- Coursework included Bayesian networks, neural networks, genetic algorithms, simulated annealing, reinforcement learning, search and heuristics, logical inference systems, fuzzy logic, autonomous agents, decision trees, multi agent systems, robotics, knowledge engineering, expert systems, rule based systems, learning classifier systems, data mining, algorithm analysis, and statistics.
- Developed class projects in LISP, Java, and Python.
- Published paper: "Biometrics and Data Mining: Comparison of Data Mining-Based Keystroke Dynamics Methods for Identity Verification", Publisher: Springer-Verlag Heidelberg, ISSN: 0302-9743, Volume 2313 / 2002, Book Title: MICAI 2002: Advances in Artificial Intelligence : Second Mexican International Conference on Artificial Intelligence Merida, Yucatan, Mexico, April 22-26, 2002. Proceedings

CU Denver • ***M.S. Applied Math*** • **2004 – 2010**

- Attended classes for the MS program on computational biology and statistics. Coursework included Bayesian statistics, graph theory, linear algebra, stochastic processes, information theory, computational biology, bioinformatics, and biology.
- Developed class projects in R, Python, Ruby, Octave, and Matlab.

Coursera • ***Deep Learning Certification*** • **2017 - Present**

- Neural Networks and Deep Learning by deeplearning.ai on Coursera. September 9, 2017
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization by deeplearning.ai on Coursera. September 14, 2017
- Structuring Machine Learning Projects by deeplearning.ai on Coursera. October 13, 2017