MATTHEW J. KIRK

PERSONAL INFORMATION

Born in United States, 18 March 1987

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twitter	@mjkirk
github	@hexgnu

WORK EXPERIENCE

2009–Present **Partner, MODULUS 7**

Modulus 7   Modulus 7 is a consultancy devoted to helping medium sized startups realize their potential through data analysis and engineering. We have had many clients since 2009 including but not limited to:

- **Siren** Siren is a progressive dating application that seeks to protect women from being approached too aggressively. While working with Siren we refactored an existing app written in Objective-C and Rails to end up winning best app of the year from Geekwire. In addition gave advice on how to analyze their data related with dating.
  Reference: Katrina HESS · katrinahess@gmail.com

- **Ritani** Ritani is a diamond company similar to BlueNile.com. While working with Ritani I have helped invent a strategy for recommending diamonds using common diamond features as well as build a scalable site that handles millions of pageviews per month.
  Reference: Simon TAM · simont@ritani.com

- **The Clymb** Before becoming a full time data scientist at The Clymb I built the first version of their search capability using Elasticsearch. Also provided brand affinity analysis using Markov Chains.
  Reference: Lorenzo CIACCI · lono@houseofyeti.com

- **Sqoop** Sqoop is an app that seeks to deliver relevant news to journalists and is already used by GeekWire and Motley Fool.
  Reference: Bill HANKES · bill@sqoop.com

2014-2015 **Data Scientist, THE CLYMB**

The Clymb   Lead new initiatives to bring data driven statistics to marketing and customer support. Reduced spending substantially through paying down technical debt.

- Refactored and deployed a new scalable data warehouse using MySQL
- Built custom clickstream analysis tool, which lead to valuable insights about customer behaviors.
- Reduced server cost per month by revamping data infrastructure using Chef and Vagrant.
- Analyzed complex data using R, PYTHON, and SQL
- Refactored and managed over 10,000 lines of SQL code.

Reference: Mike PERHAM · mperham@gmail.com

2011-2012 **Chief Scientist, SOCIALVOLT**

SocialVolt   Lead team of four developers producing an enterprise brand management tool. Campaign to pay technical debt and reduce total software defects.

- Developed clustering algorithm that utilizes a multi dimensional hash and binary trees. Will deliver clusters extremely fast.

- Implemented sentiment analysis and spam filtering for large amounts of social media posts.
- Improved SocialVolt's development process by introducing design patterns and refactoring legacy code base.
- Managed team to build proof of concept to determine influential individuals on Twitter and Facebook

Reference: Scott OPPLIGER · scott@socialvolt.com

2009-2011   Software Engineer II, WETPAINT

Wetpaint   Provide a broad range of expertise, from architecting software to making reccomendations on critical technology decisions, web strategy and business development. Serve as the team's "Ruby Expert."

- Lead project to develop what became the "Social Distribution System". This system was an expert system that would detect features related with success on editorial articles on Facebook. Involved extensive natural language processing and feature detection.
- Lead all "Rails" development, including leveraging Ruby and Alfresco to build a framework for a network of entertainment sites.
- Partnered in managing a large, technically complex transition. Shifted Wetpaint's focus from a user-generated content business to an editorial content business. Prototyped platform decisions using Ruby and Sinatra.
- Built wetpaint.com which has achieved over 10MM+ monthly unique visitors.

Reference: Rob GRADY · rgrady@gmail.com

2008-2009   Assistant Research Analyst, PARAMETRIC

Parametric Portfolio Associates   Delivered objective research for high net-worth clients. Developed enterprise software and researched program development opportunities.

- Partnered in developing an enhanced income portfolio product, which now has over $80MM in managed assets. collaborated on development of a quantitative international portfolio strategy
- Improved Eaton Vance's Structured Emerging Markets portfolio which now has over $11B in assets under management.
- Wrote original research, which became the Russell CrossVol Index
- Designed a web-based tool in C# to provide portfolio managers with market volatility reports.

Reference: Paul BOUCHEY · PBouchey@paraport.com

EDUCATION

2014-2017   Georgia Institute of Technology

Masters of Computer Science   School of Computer Science
Specialization: *Machine Learning*
Description: Classes include Machine Learning, Reinforcement Learning, Computability Complexity and Algorithms. Was selected out of over two thousand students to participate in the first cohort of the OMSCS program.

2005-2008   University of Washington, Seattle

Bachelors of Science - ACMS   Double degree in ACMS (Applied and Computational Mathematical Sciences) and Economics. Study focused on quantitative methods in economics, including financial modeling as well as optimization theory.

Bachelors of Science - Economics   Advisors: *Dr. John Sullivan*

2003-2005   Olympic College, Bremerton

Associate of Arts and Science   Finished associates degree by the time of high school graduation through the

Running Start program.

PUBLICATIONS

Expected October 2015   Thoughtful Machine Learning - In Python

O'Reilly   In the updated version of *Thoughtful Machine Learning* we delve deeper into the subject of writing machine learning software well. We talk about the common pitfalls of machine learning projects including things like "pipeline jungles", entangled data, real world shifts and other problems. We systematically go through a few cases and algorithms. This version will be updated to be fully in Python.

October 2014   Thoughtful Machine Learning

O'Reilly   This book is about applying test-driven development (TDD) to machine learning algorithms. The point is to catch the problems that might sink a product when it's deployed. This practical guide goes through the principles of TDD and machine learning.

September 2012   The Ultimate Guide to Hiring Developers

Self Published   The Ultimate Guide to Hiring Developers is an eBook devoted to figuring out how to hire developers in a competitive market. It includes insights (using research data from a survey), as to what developers really want in a job and how to attract them. It also involves some tricks of the trade.

SKILLS

Advanced   RUBY, PYTHON, R, SQL (MySQL, and Postgres), ELASTICSEARCH, Machine Learning and Operations Research, Statistics, REDIS

Intermediate   CLOJURE, LATEX, JAVA, DevOps (Vagrant, Chef, Docker), Go

Basic   JAVASCRIPT, HTML, SPARK, C

OTHER INFORMATION

Awards   2015 · Advanced Communicator Bronze Award - Toastmasters International

2000 · Eagle Scout Award – Boy Scouts of America

Sample of Speeches   2015 · Lessons Learned: Machine Learning and Technical Debt – Data Day

2014 · Part of Speech Tagging with Hidden Markov Models – Seattle.rb

2014 · Sentiment Analysis using Support Vector Machines – MagmaConf MX

2013 · Test Driven Neural Networks with Ruby – RubyConf Miami Florida

2013 · How to Overcome the apathy of Big Data – Big Ruby Conf

Languages   ENGLISH · Mothertongue

GERMAN · Intermediate

VIETNAMESE Basic (simple words and phrases only)

Interests   Piano · Woodworking · Triathlons · Hiking · Collecting Vinyl Records

June 1, 2015