Carlos F. Ramirez

cfr7@cornell.edu | (786) 797 - 2654
4933 Buckingham Court Apt 1E, St Louis, MO 63108

EDUCATION

CORNELL UNIVERSITY
BA in Mathematical Physics
College of Arts and Sciences
May 2011 | Ithaca, NY

SKILLS

LANGUAGES

Python	50K+ lines
Bash	10K+ lines
JavaScript (ES5)	10K+ lines
C	5K+ lines
C++	5K+ lines
Matlab	1K+ lines
LaTeX	1K+ lines
Haskell	Familiar

TECHNOLOGIES

Databases
MySQL • MongoDB • HyperDex
Frameworks
Flask • Express/NodeJS
Version Control & Deployment
Git • SVN • Jenkins CI
Operating Systems
RedHat, Debian, Arch, OS X
Other
ZeroMQ • JSON • YAML
PyPEG (Parser Generator)
Scrapy (Web Scraping Framework)

ADDITIONAL

Fluent in Spanish

INTERESTS

Snowboarding • Skateboarding • Cycling
ITF Taekwon-Do • Chess • Guitar

GROUPS

Cornell Cubing Club (C^3)
Cornell Glowsticking Club (GSC)

EXPERIENCE

BLOOMBERG, L.P. | Financial Software Engineer
Jul 2011 - Nov 2014 | New York, NY

- Took over lead development of **jobqueue**, an event-based distributed system to process the sanitization, storage, and QA of servicer data for over 60,000 securities and growing. Introduced ZeroMQ to change it from a polling system on one machine to an event-driven network of up to 196 nodes with real-time job control. Wrote the system CLI and trained 5 analysts in its use. Wrote and maintained the job API facing analyst and business teams.
- Led development of **remitscript2**, a YAML-based language for extraction of financial data from XLS, PDF, and TXT files in dozens of individual formats. Coordinated with a team of 50 analysts in NYC and Shanghai to develop version-controlled extraction scripts for over 60,000 securities from 25 servicers worldwide.
- Wrote **testscript2**, a distributed, test-driven Extraction, Transform, and Load system designed to update information monthly on all available mortgage securities. Wrote a data QA framework integrated with **jobqueue** using ZeroMQ, Git, and Jenkins and trained a team of analysts in writing, QAing, and deploying new tests.
- Led continuing development of **SixPoint**, a tool which translates procedural CDI payment scripts into a custom format in YAML using PyPEG and NumPY. Ported 2000 securities over to a new cashflow engine and wrote a suite of simulation tests to asses translation quality.
- Worked on **loanscript2**, a 3+TB SQLite/MongoDB database of all historical mortgage loan data in the United States. Designed and implemented a statistical method to detect incorrect or incomplete data, in addition to a numerical approach to "filling in" missing pieces of data to use in cashflow projections.

CORNELL UNIVERSITY | Teaching Assistant, Physics Dept.
August 2008 - May 2011 | Ithaca, NY

- Tutored students taking any of the college's introductory physics courses, covering Mechanics, Electricity and Magnetism, Waves, Optics, and Thermodynamics

RESEARCH

CORNELL UNIVERSITY | Lab Assistant
August 2008 - May 2011 | Ithaca, NY

- Assisted *Prof. Tomas Arias* in administering a 48-node open source supercomputer and building of a second 24-node system. Ran density-functional theory calculations through DFT++ with Python and Octave.

FLORIDA INTERNATIONAL UNIVERSITY | Lab Assistant
April 2006 - September 2006 | Miami, FL

- Worked with *Prof. Kenneth Furton* to develop and maintain Java and Excel VBA data analysis software, investigating the chemical composition of human scent.

PUBLICATIONS

[1] A. M. Curran, C. F. Ramirez, A. A. Schoon, and K. G. Furton. The frequency of occurrence and discriminatory power of compounds found in human scent across a population determined by spme-gc/ms. *Journal of Chromatography B*, 2007.