Efrem Rensi

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Skills

- Languages: Python, Javascript, Matlab, C, Bash/DOS scripting, x86 assembly language
- Typesetting: LaTeX, Github Markdown, HTML
- Editors/IDEs: Sublime Text, Spyder
- Database/Query tools: xpath and css selectors, regex, SQL (Postgres), SQLAlchemy
- Web Development: Flask, Heroku, AWS S3 & EC2, Oauth2 flow
- GIS tools: Python Folium, leaflet.js, GeoJSON
- Source management: Git, Github workflow
- I'm familiar with Linux (Ubuntu, MINT) and currently develop using MINT 18 on my laptop

Work History

Independent project: Activity Heatmap Web-App (1/2016 - Present)
Full-Stack Python Development
An open-source web app for visualization of GIS activity data. http://heatflask.herokuapp.com

- Backend: periodic cron-jobs to download of activity data from (Strava/Garmin) via REST API, stored as rows in Heroku PostgreSQL database with SQLAlchemy data-models and ORM.
- Frontend: Python Flask framework running on Heroku with leaflet.js map API and Bootstrap

Center on Youth Registration Reform (6/2015-8/2015)
Web Scraping
Provided preliminary data to CYRR for working towards reforming sex-offender legislation as it applies to juveniles.

- Wrote a web-scraper using Python Scrapy framework with a central spider class and 20 sub-spiders to scrape public Sex-Offender registries for 20 states. Data stored in PostgreSQL via SQLAlchemy.
- Provided CYRR with preliminary data regarding number of offenders on the registry who were convicted as juveniles.
- Scraping jobs controled via scrapyd REST API (https://registry-backend.herokuapp.com)
- A minimal (Python Flask) front-end is viewable at https://registry-frontend.herokuapp.com

Impact Hub Oakland co-working space (3/2015 - 2/2016)
Business Intelligence
Parsed Excel spreadsheets & Google Calendar, presented aggregate data

- Wrote Python scripts to parse and summarize venue rental invoices.
- Used entry/exit data from IHO's card swipe hardware to analyze space usage for individual members and groups, providing IHO management with information about member habits.
- Used invoice records and calendar entries to create a summary of space rental/usage.

Research in Industrial Projects for Students (RIPS) at UCLA (6/2006-8/2006)
Algorithm development, Documentation, Programming
Team leader for Image-based-spam detection proof-of-concept project at Institute for Pure and Applied Mathematics (IPAM), sponsored by Symantec Inc.

- Developed an approach based on image segmentation using Matlab's image processing toolbox.
- Collaborated on publication of *Image Similarity Techniques For Detecting Image-Based Spam.*

Volunteer Projects

Berkeley Food Pantry (8/2015-Present)
Full-Stack Development

- Developing Python web-application for visualization of aggregate data (food donations received, patrons served) for Berkeley Food Pantry. This involves using Dropbox API to access Excel files, parsing them and creating infographics to be displayed on their WIX-based website.

Code for America (Open Oakland Brigade) (8/2015-12/2015)
Software Development
I briefly worked with California Civic Lab, a project to extend Oakland's successful open-disclosure project to other California city and County governments. This got me motivated to do web-development.

- Gained familiarity with group collaboration via GitHub, creating and fixing issues, making pull requests, etc.
- Got familiar with Django app development and working in a team environment

Education

University of California, Davis Davis, CA, U.S.A. • M.S. Applied Mathematics, 2006-2014

- Developed a new thick-restarted Krylov-subspace method for MIMO model order-reduction.
- Introduced a new orthogonalization process for complex-valued Krylov subspace basis vectors that cuts computational costs in half by treating complex vectors as long real-valued vectors.
- Wrote a suite of Matlab scripts for proof-of-concept implementation and analysis of the method.
- Produced novel transfer-function gain plots that make pole-zero analysis intuitive.
- Worked as a Teaching Assistant for several college-level mathematics courses.

More

For brevity I've listed only my highlighted achievements. See more on my LinkedIn and my Github profiles.