Mark Jason Dominus

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PROFESSIONAL SUMMARY

Engineer – Programmer - Teacher – Writer

CAREER ACHIEVEMENTS

OPENTRONS – New York, NY (remote)   2020 – Dec 2021
Principal Engineer
Core member of Opentrons' **Reopen Labs**, which used Opentrons' OT2 robots to perform up to 40,000 COVID-19 tests per day. I was involved in maintenance and development of **DaViD**, our in-house laboratory information management software that orchestrated the tests. DaViD was written in the Javascript dialect TypeScript, and ran on a suite of AWS Lambda containers, using Amazon RDS and S3 for its back-end storage. Also: release management, extensive review of junior programmers' code, infrastructure planning, tool development.

ZIPRECRUITER, INC. – Santa Monica, CA (remote)   2013 - 2020
Principal Engineer
I worked on the Marketplace Products team, developing systems to manage the internal "marketplace" that we used to take jobs from many sources, match them with job-seekers from many other sources, and ensure that everyone was paid the right amounts. This part of ZR accounted for about one-third of the company's revenue. I also did other projects as they presented themselves.

- **Greenlight**, a complex system for ensuring compliance with SOX audit and signoff requirements, gating code going to production, coordinating code reviews. Greenlight comprised around 10,000 lines of mostly Python 3.7 code. It interacted with users via SSH and Slack, and with Buildbot, our Jenkins-based deployment pipeline. A separate server, Hestia, communicated with Gitlab's API to manage Gitlab merge requests. Partway along I converted it to run in a Docker container, and I was engaged in converting it for Kubernetes operation when I left ZR. For k8s, its data was stored in Amazon RDS and its used Celery and Redis to manage its job queue. Greenlight was extremely popular with the developer staff; it took much of the pain out of dealing with Git.
- Self-arranged visits to the Account Management and Customer Success teams, to learn what they did and how, and pick low-hanging fruits. My account management dashboard is still in use. For Customer Success, my **2banner** system saved hundreds of hours of wasted time by preventing multiple CS reps from vetting the same client at the same time.
- Ongoing project to store, retrieve, and present "organic" jobs to job-seekers. Most of ZipRecruiter's jobs were obtained directly from customers, but "organic" jobs were scraped from the Web. The data and storage models were completely different, but I was able to integrate the new organic job system with the existing job-handling system.
- Ongoing project to automatically process bounce and unsubscribe notifications from our Email Service Providers; integration with XVerify address verification service.
- Designed `run-synchronized`, which orchestrated our main data processing and accounting pipeline. I wasn't asked to do this; I saw a problem and solved it. The solution lasted for six and a half years.
- Many large-scale code and database reorganizations to pay off earlier technical debt.
- Ongoing work on CICD pipeline, testing, and release tooling.
- Documentation. Mentoring. Code review. Wiki pages. Technical talks.

GRANT STREET GROUP – Pittsburgh, PA (remote)   2012 - 2013
Senior Developer
Worked with three other developers to maintain and improve Payment Express, the company's e-payment processing system.
- New features included: payment size limitation feature; read-only access to reports; removal of voided credit card transactions from reports, etc.

IC GROUP – Philadelphia, PA   2009 - 2012
Senior Developer
Part of small elite team with complete responsibility for maintenance of 15-year-old codebase and development of new software to serve 18,000 customers.
- With another senior developer, designed and implemented a complete replacement for IC Group's internal billing and accounting system
- Completely rewrote email filtering feature, a major customer-facing service; the rewrite was backward-compatible with the legacy customer filter database
- With another senior developer, designed and implemented a replacement for the company's core product, an email queuing and delivery system

PENN GENOME FRONTIERS INSTITUTE – Philadelphia, PA   2006 - 2009
Senior Programmer
Part of a four-person team of developers of [TreeBase 2](#), with principal responsibility for the development of search features and oversight of migration for several hundred million legacy records. Programming in Java 5 with Spring and Hibernate.
- Design and development of a web-based accounting system for the Beowulf supercomputing cluster.
- Planned and delivered summer classes in bio-informatics Perl programming

UNIVERSITY OF PENNSYLVANIA - Philadelphia, PA   2004 - 2006
Senior Programmer – Information Systems and Computing
Responsible for development and maintenance of software used to manage accounts, email services and network security for 14,000 students and 10,000 staff and faculty
- Lead in project to start regularly using a revision control system and in developing automated regression tests for our software
- Developed new modules to manage the user name functionality for the student e-mail system. My new system ran a **hundred times** faster than the one it replaced.

PLOVER SYSTEMS - Philadelphia, PA   1995 - 2004
Principal/Consultant
Plover specialized in developing e-commerce systems, and also provided systems and security consulting.
- Developed the on-line commerce sites for Estée Lauder's Clinique and Origins brands
- Developed interactive applications for Reel-Time, CyberMedical, Prudential Insurance Company of America, Medical Broadcasting Company, Schering Drugs and Time-Warner
- Contributor to the core of the Perl Language

TIME WARNER – New York City, NY (partly telecommuting)   1994 - 1995
Senior Systems Engineer
Chief technical engineer at Pathfinder, company's first World-Wide Web project and main internet service.
- Developed Web applications, planned technical and security infrastructure, administered the UNIX systems
- Coordinated with 30 content partners and managed four programmers and system administrators

UNIVERSITY OF PENNSYLVANIA - Philadelphia, PA   1990 - 1994
Systems Programmer
- Supported and maintained 400 applications for Graduate Computing Services

LECTURING AND TEACHING EXPERIENCE

- Keynote address at the ACM 2008 OOPSLA Conference
- Invited residency at the **Recurse Center**, April 2015
- Developed and delivered classes on Perl worldwide for corporate and government clients: Morgan Stanley, IBM, U.S. Air Force, Schering Drug, Nortel, British Telecom, National Center for Biotechnology Information, Space Telescope Science Institute, Fleet Bank, etc.
- Three and six-hour tutorials at Usenix, LISA, OSCON conferences
- Perennially popular speaker at many conferences including YAPC, !!Con
- University of Pennsylvania – Taught full-credit C programming class summer 1992

WRITING AND EDITING EXPERIENCE

- ***Higher-Order Perl*** – (2005, Morgan Kaufmann) "One of the best books on programming I have read for a long time." (Martin Schweitzer, *Computing Reviews*)
- *The Universe of Discourse* – My widely-read blog has published over 800 articles since 2006.
- Math Stack Exchange – My answers are among the all-time top-rated posts. (1 2)
- Managing Editor – www.perl.com – edited articles by myself and others
- Columnist – *The Perl Journal* – contributed 14 feature articles; most reprinted in *Computer Science & Perl Programming: Best of the Perl Journal.* (O'Reilly and Associates)
- Published articles also in *WIRED*, *IEEE Software*, *PerlMonth*

COMPUTER SKILLS

Operating Systems: Unix / Linux
Programming languages: Python, Perl, Java, C, Javascript / TypeScript, Haskell, Golang, etc.
Databases: MySQL, Amazon RDS, Postgres, SQLite
AWS: DynamoDB, S3, SQS, Lambda, EC2

EDUCATION

Degree Program: Mathematics, Rensselaer Polytechnic Institute
Graduate Coursework at University of Pennsylvania – Mathematics and Computer Science
Graduate Coursework at Columbia University – Mathematics and Computer Science