Gregory Stark

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Education

Massachusetts Institute of Technology . . . . *1992 — 1996*
Computer Science and Engineering
Laboratory in Software Engineering, Compiler Design, Computer Systems, Complexity Theory, Computer Architecture, Theory of Computation, Assembly Programming, and Number Theory

Online Courses
Mining Massive Data Sets (Stanford University on Coursera)

Skills

Computer Languages
ANSI C 89, Python, Ruby, Perl, ANSI SQL (PostgreSQL, Oracle, DB2, MySQL, Microsoft SQL Server) Lisp variants (Scheme, Elisp), Bourne and POSIX shell programming, and various arcane languages.

Computer Systems
POSIX Unix application level development (Linux, BSD 4.3, NetBSD, Sun Solaris, DEC Ultrix, SGI Irix, IBM AIX). Some kernel experience on Linux and NetBSD.

Experience building highly scalable OLTP database systems with very high transaction rates using both standard SQL and special Oracle and PostgreSQL features such as partitioned tables, arrays, and GIST indexes.

Familiar with POSIX Threads, networking protocols (TCP/IP, UDP, HTTP, SSL, DNS), security and encryption systems (Kerberos, SSH, SSL, PGP).

Can speak and write English and French.
Canadian Citizen. Stamp 4 residency in Ireland

Experience

Heroku (Salesforce.com) . . . . *November 2013 — September 2014*
Software Engineer
Developed and managed software to maintain AWS cloud-hosted PostgreSQL databases. Specific contributions were improved tracking of replication topology during creation of new replicas, signed manifest files in backups, tools for forensic examination of corrupted databases.

On-call database engineer for the world's largest fleet of PostgreSQL databases. Examined performance problems due to customer usage, isolation (noisy neighbour) problems, and PostgreSQL bugs. Analysed and mitigated corruption issues due to platform bugs, PostgreSQL bugs, and AWS hardware issues. Developed procedures and implemented software solutions for common on-call issues.

Google Ireland . . . . *September 2009 — August 2013*
Database Engineer
Managed multiple databases using Oracle, MySQL, Microsoft SQL, and PostgreSQL including Google's Oracle Financials installation, ticketing system, and other critical systems. Served on on-call rotation responding to emergencies and major operational issues.

Primary owner for team ticketing system database. Managed multiple physical and logical standbys for the team's largest database. Managed major database upgrade, hardware upgrades, storage upgrades. Instituted proactive capacity management procedures. Worked with developers to debug data issues caused by application usage.

Primary owner for team monitoring software, ticket duty prioritization software, and on-call rotation using custom Google software. Developed custom code to extract key operational metrics from Oracle and integrate it in the Google production monitoring software.

Experience Continued

EnterpriseDB UK . . . . *November 2006 — May 2009*
PostgreSQL Developer

Worked on EnterpriseDB Advanced Server database based on PostgreSQL extended to be compatible with Oracle.

Implemented features for both PostgreSQL and EDB's proprietary derivative product including "online" index builds for PostgreSQL allowing database users to build indexes without locking out other sessions from updating the table being indexed; I/O prefetching for asynchronous I/O on subsystems with multiple drives capable of acting concurrently (i.e. RAID arrays); bounded sort algorithm to optimise top-k queries; denser optimised storage for variable-length data types; and key features used in partitioning and recursive queries.

Also performed customer consultations including training sessions, on-site performance audits (including international travel), and 3rd level support engineering.

PostgreSQL Database Consulting . . . . *June 2002 — October 2006*

Designed custom modules for a geo-targeting shopping engine to precalculate and cache geography-based search results across Canada, manage multilingual internationalised database and generate barcodes and coupon PDF files dynamically.

Work for other clients included implementing a bit-vector GIST index method for rapid matching of large sets of constraints on a dating web site and designing high level database architecture for a major social networking site.

Ideas and Associates . . . . *December 1998 — May 2002*
Project Manager and System Architect

Developed Freelotto.com, the top sweepstakes site in the world. Designed and maintained web server farm running Apache with mod_perl and Oracle 8.0.5 database handling over a million sweepstake entries per day with 24x7 operation.

Managed growth of Freelotto up to a team of twelve including programmers, system administrators, and database administrators. Migrated system to Oracle 8i, implemented a data warehousing solution and maintained a farm of web servers and mail servers. Was personally responsible for client relationship, and technical requirements of projects.

Generation.NET . . . . *June 1997 — November 1998*
Web Development Programmer

Projects

PostgreSQL Committer, PGConf.eu Conference Organizer . . . . *2006 —*

As a PostgreSQL Committer I review and commit code contributed to the project by others as well as developing features myself. As part of the PGConf.eu 2013 organizing committee I served as the group's primary local contact. I also organize the Dublin Postgres User Group's monthly meetups, arranging speakers and giving presentations myself.

Debian GNU/Linux Developer . . . . *1996 — 2000*

Packaged several packages for the Debian GNU/Linux distribution including Kerberos, Arla AFS client, and MIT Zephyr.

W3 (The Emacs Web Browser)

Emacs-W3 is a web browser implemented entirely in Emacs Lisp. I contributed the much improved tables support that implemented the auto-layout algorithm from RFC 1942 as well as rowspan support.

M.I.T. 6.270 (Autonomous Lego Robot Contest) Contest Organiser . . . . . *1995 — 1996*

M.I.T. Student Information Processing Board (SIPB) . . . . *March 1993 —*