

# Dave Berton

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## Profile

I am a professional developer with solid database experience. I have strong Python knowledge, as well as expertise in the C++ language. This includes extensive experience in application and database design, as well as with library and API development both in the \*nix environment and on other platforms. I have project management and architect-level experience, and am familiar with leading large, complicated projects through all phases of development, testing, documentation, release and maintenance.

## Skills

Expert C++ application and library development, with STL, Boost, Qt. Proficient Python developer (Django, CherryPy, SQLAlchemy). Extensive database programming, including Oracle, PostgreSQL, Redshift, and MySQL. Unix shell scripting with bash and Python. Cross-platform development, including Linux (Debian, Red Hat, CentOS), OpenBSD, Mac OS X and Windows. Infrastructure and operations with git, ansible and AWS. Experience with many open source projects, tools and libraries.

## Experience

Architect (and Software Engineer), Monetate Inc; Conshohocken, PA 2014-current  
Extremely large scale data, brought to bear in the online marketing arena. Primarily Python development, focused on django and cherrypy. I also designed and coded a large component of the backend infrastructure for dynamic image compositing using C++ (headless webkit), as well as implemented two-factor authentication and single sign-on (JWT) for web app logins.

- Primary development in python/sqlalchemy/cherrypy as well as C++, Go
- Heavy scripting with bash and python
- Web design, javascript/ajax/angularjs
- CentOS, AWS, git

Director of Application Development, Rita's Franchise Company; Trevoose, PA  
2012-2013

Behind the franchise stores is a large corporate infrastructure, with a large number of internal systems, databases and web sites which all work in concert to support this successful business. I architected and managed a small team to implement all internal systems which manage 600+ franchise locations, hundreds of corporate and remote users, and coordinate multiple 3rd party integrations.

- Primary development in C++ and Objective-C (iOS apps), python/sqlalchemy/cherrypy backend development
- ColdFusion (internal web app)
- Heavy scripting with bash and python
- Web design, javascript/ajax/angularjs
- Debian, Win32/64, Mac OS X, git

### Senior Software Engineer, Eventide Inc.; Little Ferry, NJ 2005-2012

Eventide (<http://eventide.com>) is a well-known name in the audio industry. They are less well-known in the communications industry, where they are a successful vendor of digital communications recorders. I designed and implemented a suite of client applications which query and manipulate the data on the Eventide Atlas Series, NexLog Series and DIR911t recorders (<http://eventide.com/CommunicationsDivision.aspx>). I also designed and built the Update Utility (which runs on two architectures and four different operating systems) for the Eventide Stomp Boxes (<http://web.eventide.com/AudioDivision.aspx>).

- Primary development in C++ (gcc on Linux, MSVC++ on Win32 and gcc on Mac OS X)
- Heavy use of Qt, STL, Boost
- Heavy scripting in Bash (Linux) and Zsh (Win32); build scripts using qmake (all platforms)
- GUI design for Windows and Mac client applications using Qt
- Significant network programming for digital logging
- Screen capture recording utilizing VNC protocol
- Multi-threaded programming throughout, maintaining legacy code in pthreads, writing new code in Qt or Boost threads
- Maintenance and bug fixing on various server-side processes running on digital recorders
- Multi-threaded database programming, PostgreSQL (server) and sqlite (for client applications)
- Custom GUI design and implementation using low-level Qt painting and custom widgets (screenshots available)
- Build system design and maintenance
- Version control (Perforce)
- Issue tracking (TestTrack)
- Mentor for junior-level programmers
- Debian, Win32/64, Mac OS X

### Associate Research Staff Member, NEC Laboratories America, Inc; Princeton, NJ 2002-2005

NEC Labs is a center for advanced computer science research. I designed and implemented the Inquirus V3 metasearch engine, <http://citeseer.ist.psu.edu/glover99architecture.html> as part of a team led by Dr. Eric Glover.

- Heavy C++ (gcc on Linux)
- Heavy use of Qt and ACE libraries. Some Boost.
- Significant server-side work, multi-threaded search engine and query optimizer
- Some SVM usage for query optimization/rewriting
- Python and bash scripting (mostly for build environment and database maintenance)
- Perforce version control
- Debian

### Software Engineer, Trolltech AS; Oslo, Norway 2000-2001

I accepted this once-in-a-lifetime job at Trolltech because they are a best-in-class design and development shop. The Qt library is the foundation of many commercial and open source projects, and I was hired to help expand it. I designed and implemented the first database module in Qt 3.0, <http://doc.trolltech.com/3.0/sql.html>. I also helped design the modern qmake utility, <http://doc.trolltech.com/3.0/qmake-manual.html>.

- Heavy C++ (gcc on Linux, MSVC++ on Win32, gcc on OpenBSD)

- Heavy database usage from the client side (PostgreSQL, MySQL, sqlite, Oracle, ODBC, MS SQL Server)
- Heavy qmake usage and development for build infrastructure
- Significant library API design and development, including widgets
- Significant technical documentation of low-level library APIs (both "how to" manuals and member function documentation)
- Low-level maintenance of Qt Win32 multi-threaded library
- Responsible for build and release of official Qt library binaries on multiple platforms (including Linux and OpenBSD)
- Customer support for low-level technical issues across all platforms
- Perforce version control
- Custom, in-house issue tracking software
- Debian, Win32, OpenBSD

Senior Programmer, Allegient Systems, Inc; Wilton, CT 1998-2000 & 2001-2002

I helped this company grow from a small business to a medium-sized corporation with millions of dollars in annual billing. I designed and built the internal billing and review application, used by all internal and remote employees to audit legal invoices, which was the core of the company's service. Note: a year's hiatus from Allegient Systems was spent at Trolltech (above).

- C++, Java and web development (MSVC++ on Win32, WebLogic, javascript)
- Heavy Oracle usage; SQL
- Qt and Clarion for Windows used for client application development
- Custom reporting
- Significant data processing of text feeds into normalized database for auditing
- Managed team of 5+ developers and technical staff
- MSVC++
- Some Linux (RedHat, Debian)
- Visual Source Safe version control
- Microsoft Project

## Education

University of Massachusetts, Amherst, MA Bachelor of Arts, 1995

## Open Source (see <http://mosey.org>)

<http://ichabod.org/>

<http://cuepee.org/>

<http://thomaspaine.org/>

## Articles (see <http://mosey.org>)

We Are Here To Win: Why Monetate Engineering Succeeds 2016-02

Stale-While-Revalidate for CherryPy; Monetate Engineering 2014-08

Asynchronous Database Access with Qt 4.x; Linux Journal 2007-06

Advanced Video Coding on Linux Use H.264 to create high-quality, low-bitrate digital video with currently available tools on Linux. (x264); Linux Journal 2006-10

The Qt Designer IDE: Everything but the compiler; Dr. Dobb's Journal 2004-09

Qt Designer: Code Generation and GUI Design; C/C++ Users Journal 2004-07

C++ const Correctness; Linux Journal 2004-06-15