

**Andrew William Gibbs**  
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## Bio

Andrew has been programming in some form or other since high school and loves the craft deeply. He has had software development day jobs in corporate, university and government environments, as well as moonlighted as a consultant on diverse projects. A software renaissance man, Andrew can comfortably shift between being a hands on programmer and project architect, and his experience runs the gamut of data modeling, storage systems, distributed systems, user interfaces, system integration, security engineering, configuration management, system administration, requirements analysis, and mentoring. His preferred mode of operation is to fully absorb a complex problem domain and spend two to four years building a robust end-to-end solution therein, but he also enjoys the occasional short-fuse project. Finally, Andrew exhibits a fanatical attention to detail, possesses superior organizational skills, and has a superlative command of both written and oral communications.

## Day Jobs

- **Department of Defense** Maryland  
Software Engineer, Project Manager 02/2009 – Present
  - Assumed the team lead position for a distributed collection system prototype eight months into its existence with the goal of extending, polishing and operationalizing it
  - Coordinated integration into corporate data flows, processing systems, and storage repositories
  - Built the software for the analyst/operator interface and the command-and-control engine
  - Directed and oversaw the implementation of a metrics system for health and status monitoring
  - Worked with various partner organizations to diagnose and correct an assortment of defects and limitations in underpinning systems
  - Managed team personnel issues ranging from recruitment, retention, task partitioning and deconfliction, performance evaluation, and mentoring
  - Regularly briefed and engaged high-level stakeholders on project progress and challenges
  
- **Department of Defense** Maryland  
Software Engineer, Project Manager 06/2005 – 02/2009
  - Conceptualized, designed, and implemented a software framework for pluggable integration of a heterogeneous collection of analytic tools
  - Captured relevant and significant security issues in the framework
  - Structured the plug-in execution environment to exhibit linear scalability
  - Created a web-based wiring-diagram interface with which end users can connect the inputs and outputs of plug-ins to specify data flows
  - Leveraged AJAX for a GUI as rich as a thick client but without the corresponding deployment burden
  - Directed the work of several developers and managed project milestones
  - Ultimately afforded analysts much greater agility in executing analytic tasks by providing a toolbox of components that were configurable and linkable without conventional programming
  
- **National Institute of Standards and Technology** Gaithersburg, MD  
Software Engineer, Intern 05/2004 – 08/2004
  - Improved the National Software Reference Library's data warehouse by decoupling its underlying relational database schema from the ingest formats of downstream COTS and GOTS tools

- **Tufts University, Health Sciences Schools** Boston, MA  
 Software Engineer 10/2000 – 08/2003
  - Co-designed a rewrite of a system for course evaluation authoring, completion and reporting, ultimately used by hundreds of students to evaluate dozens of courses
  - Implemented the reporting piece of this course evaluation software
  - Researched potential vulnerabilities to compromise of sensitive student information and designed counter-measures to mitigate them
- **Microsoft** Redmond, WA  
 Software Engineer, Intern 05/2001 – 08/2001
  - Interacted with testers in the NT Base Test group to identify candidates for automation of previously manual testing procedures
  - Wrote a suite of tools that were used to verify Windows XP's Dynamic Update
- **Compaq** Shrewsbury, MA  
 Software Engineer, Intern 05/2000 – 08/2000
  - Worked in the Alpha Chip Development Group in CAD/Test, fleshing out the interface between a circuit analysis tool and its scripting interface
- **Motorola** Mansfield, MA  
 Web Developer, Intern 06/1998 – 08/1998
  - Worked in the Customer Satisfaction group, bringing a previously Word document based report management process into a web based system

### Consulting Jobs (Commando Software, Sole Proprietor)

- **Partners Healthcare at Massachusetts General Hospital** 08/2009 – Present
  - Negotiated and provided contract support to the “RaceTrack” radiology case tracking system
  - Reviewed the existing relational database structure and designed myriad improvements
  - Designed and implemented a background job management system for asynchronous processing
  - Designed and implemented a stored procedure based “closure table” management system to underpin database driven management of hierarchical data such as tags and roles
  - Pending work includes the build out of a role based access control system, design of caching strategies, development of mechanisms for document export, and facilitation of test automation
- **G2 Web Services through Stryker IP** 04/2006 – 08/2006
  - Negotiated and provided subcontract support to a system for brand protection analytics
  - Developed GUIs that drove analyst workflow for assessing and reporting on policy compliance
  - Evaluated and extended relational database structures to support analyst workflow management
- **US School Of Commercial Music** 09/2002 – 08/2003
  - Negotiated and provided contract support to develop a web based customer community
  - Solicited workflow requirements and developed the GUI for this web application
  - Developed the underpinning relational database for this web application

## Open Source Community Contributions

- **Perl DBD::Mock Library** 2005
  - identified a limitation in the Perl DBD::Mock database unit testing library that interfered with validating the `last_insert_id` value when inserting into multiple tables with a single connection
  - discussed issue with maintainer and submitted a patch as well as related test cases and documentation
  - contribution was released to CPAN on 14 December 2005 as part of DBD::Mock v1.32

## Education

- **Johns Hopkins University**, Whiting School of Engineering Baltimore, MD
  - MS in Security Informatics, MSE in Computer Science 09/2003 – 05/2005
- **Tufts University**, School of Engineering Medford, MA
  - BS in Computer Science 09/1998 – 05/2002

## Academic Projects

- Cryptographic Pseudonym Based Web Communities (graduate; spring 2005)
- Ad-hoc Wireless Network Configuration (graduate; spring 2004)
- Network Based Delivery Of Very Large Imagery (undergraduate; spring 2002)

## Technical Skill Profile

After discovering programming on his TI-85 calculator in high school, Andrew dove into lower level development by immersing himself in **C** programming and then came to appreciate higher level languages by discovering **Perl**. As an undergraduate, he drilled further into **C** programming and then bifurcated to both lower and higher level programming, on the one hand doing **assembly programming** and studying **microprocessor architecture**, while on the other hand dabbling in such languages as **Lisp** and **Prolog**. He furthermore explored such topics as **Artificial Intelligence**, **Virtual Reality** and **Operating Systems**, and rounded things out with ample courses in **Electrical Engineering** and **Mathematics**. As a graduate student he explored such topics as **Cryptography**, **Network Security**, and **Distributed Systems**.

Internships gave Andrew professional experience developing in **C**, **C++** and **Perl** and he meanwhile began dabbling in **web technologies**. An assortment of jobs through the 2000s yielded Andrew a deep knowledge of **Perl** and **relational databases** while an assortment of classwork from 2002–2005 gave him significant experience in **Java**. From 2005 onward Andrew has been immersed in **Rich Internet Applications** and thus **JavaScript**, **HTML**, **XML**, **CSS** and **REST**. Andrew began designing, building and tuning **relational database** backed applications as long ago as 2000; he began with **MySQL** but switched to **PostgreSQL** in 2009 and has since written ample **plpgsql**. To keep his lower level knowledge sharp he has recently begun to play with **Robotics** in his spare time. He discovered **Ruby** in 2005 and began taking it seriously in 2009 with a couple **Ruby On Rails** projects.

While Andrew knows the Windows **OS** (and has serious **Visio**-fu), he considers himself a **Linux** guy, having worked to attain a deep knowledge of **Linux** since 2002, bouncing over time between **Gentoo**, **RedHat**, and **Ubuntu**. He knows his way around the **Unix shell**, the **Apache** web server, package management tools (**RPM**, **Yum**, **dpkg**, **APT**), **VMWare**, **Wireshark**, **iptables**, and a variety of other well known open source products. For version control software he used **CVS** from 2000–2005, **Subversion** from 2005–2009, and **Git** from 2009 onward. He is an **Emacs** ninja to the extent that he regularly tweaks his environment by writing custom **eLisp** and even uses a set of foot pedals (for Ctrl and Alt, naturally).