

# Erik Greenwald

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## Work Experience

**ElfGA Software Solutions**, Bel Air, MD. From September, 2013. Developed several web and mobile apps as both a team member and sole developer. Provided consulting and training to clients.

**US Army Research Laboratory**, Aberdeen Proving Ground, MD. From September 2003 to September, 2013. Worked on numerous aspects of BRL-CAD, a Computer-Aided Design and analysis package used throughout the DoD and its contractors to support engineering analysis. Authored a complete replacement of the build/compilation environment based upon GNU auto-tools suite. This moved the package from a platform-specific build system to a capability-based system. The result was faster porting of the package to a wide variety of systems, and a more stable build environment that did not rely on special-purpose tools in the package. As a result, BRL-CAD has been ported to and is maintained on numerous additional platforms, providing greater availability and ease of installation to the customer base.

Designed and developed "metaball" modeling capability within BRL-CAD, including geometric representation, user editing, persistence representation, and performance tuning. This allowed modeling of phenomena such as blast envelopes radiative fields, and areas of influence. As a result, several new types of engineering analysis are now possible.

When organization was looking for project management services I introduced G-forge and Wiki technologies. I performed initial installation, configuration and evaluation. I provided system and software administration and management of the production service. Based upon capabilities and success, the service was adopted by several other projects within the organization.

Performed technical monitoring and oversight of a contract with multi-national participants to produce a high-performance ray-tracing engine. Developed a test suite to compare performance of resultant code with legacy codes. Documented findings for management, participated in project reviews as a government representative.

Performed benchmarking and cost/benefit assessments of computer hardware configurations for major hardware purchases by the branch and division.

**Federal Express** (contract via NCS), Collierville, TN. From October 2002 to May 31, 2003. Member of the System Administration & Consulting (SA&C) team, providing 24/7 operational support of Internet facing DMZ and associated support networks. Administration of Sun Solaris, HP-UX, RedHat Linux, and FreeBSD servers. Wrote and maintained several administration support software packages; including a "Move To Production" query CGI, a statistics gathering tool interfacing a "Holon Hyperflow" redundant router, and distributed account management software. Technical Lead of SA&C Linux initiative. Maintain APT repository for a standardized upgrade path and providing an avenue for immediate application of security patches to Linux hosts. Drafted and maintain minimal package lists and anaconda "comps" files for reduced administrative overhead and minimized security exposure.

**Dynamic Solutions, Inc.** Springfield, Missouri. From December 1998 to November 2000, part time during college. Prepared and repaired Linux boxes for clients. Administered local network and Internet presence (Linux and FreeBSD). Provided detailed security information, system audits and implemented enhancements to protect the network from unauthorized access. CGI programming in Perl, C, and SQL to allow clients to sign up for services as well as providing community service web sites. Developed Java application from beginning to end that managed customer, inventory, sales, and service information using an SQL database.

## Skills

**C/C++** GNOME, GTK+, OpenGL, OpenAL, SDL, Client/Server, TCP/IP, UDP, Multi threaded (pthreads), embedded.

**Apple iOS development** using the Objective-C and Swift programming languages.

**SQL** Oracle, MySQL and PostGreSQL using C/C++, Java, Perl, PHP, and the product shells.

**Java** Standard (Application and Applet) and Mobile editions, as well as JavaScript (ECMAScript).

**Unix Shell Scripting** Wrote several system scripts including Unix startup script components, file system management utilities, data retrieval and archiving scripts, bookmark management, and CGI programs.

**Assembly** Programming. Intel 80x86, Motorola 6811 and 6812 microcontrollers, MIPS R2000, PPC (G3, G4, and G5), MOS 6510, AMD Opteron, PIC 16f88 microcontrollers.

**PHP** interfacing SQL and RRD databases as well as parsing external web pages for content aggregation.

**OpenGL** programming in multiple languages. Written several small demo/example programs. Wrote and released a small 3d OpenGL/SDL video game for BSD/Linux/Windows.

**Familiar with various operating systems**, including Solaris, HPUX, AIX, IRIX, FreeBSD, MacOSX, and various distributions of Linux.

**Open Source Community Involvement.** Port Maintainer for FreeBSD responsible for projects like BRL-CAD, OpenAL and the OpenGL game GL-117, among others. Committer for the OpenAL Audio library project hosted at Creative. Various other projects maintained and/or contributed to.

**System administration**, UNIX, Solaris, IRIX, HPUX, BSD, MacOS X, Linux.

Excellent **communication** skills. Published several DoD technical reports. Authored several articles published on software development sites. Presented technical and project briefings to audiences ranging from software developers to executive management.

## Education

**Southwest Missouri State University**, Springfield, Missouri. Bachelors of Science in Computer Science (CSAB accredited), with minors in Mathematics and Physics.