

# Matthew E. Messerman

4549 Bancroft St #1  
San Diego, CA 92116  
(619)251-6578  
messerman@gmail.com

Accomplished Software Engineer with over 10 years of professional experience in all stages of software design and development. Excellent problem solving skills, with strong interest and experience in Software Architecture and User Interface design.

## Verimatrix, Inc.

### Senior Software Engineer

San Diego, CA  
April 2007 - Present

#### ViewRight PC Player

- Responsible for the design, architecture and development of several critical portions of the ViewRight PC Player (Verimatrix's secure IPTV player) during all phases of the software development process. The PC Player is written using Microsoft Visual C++.
- Rearchitected and refactored the PC Player, placing the core components into a customer-usable back-end SDK, as well as rearchitecting the front-end GUI portion of the Player to decouple the GUI from the back-end logic, reducing hangs and eliminating redundant code in various interfaces to a single implementation, providing a more robust and product.
- Developed stand-alone DVR product for multicast streams, able to record, playback, perform trick-play operations, and provides a live-buffering mechanism. Developed an integration interface between the DVR and the PC Player via Named Pipe communication.
- Designed and implemented a Named Pipe interface to the Player, providing full access to a majority of the player's key features to middleware operators deploying the Player. Developed both C++ and Ruby clients for this interface.
- Developed scripts to perform a nightly build of the Player and an automated testing environment using Ruby scripts and the Ruby Named Pipe client to perform nightly testing of the Player.
- Utilized the Named Pipe interface to develop an ActiveX interface to the player as a proof-of-concept for a later, fully-integrated, ActiveX Player.
- Integrated the Cloakware Security Suite into the Player for prevention of reverse engineering and to increase security of the content being protected by the secure Player.
- Implemented Apple's HTTP Live Streaming protocol, enabling the PC Player to play the same streams as QuickTime X and Apple iPhones.
- Designed and developed an optimized, lock-free, customizable data structure (called the BucketQueue) to handle streaming data without contention or lag regardless of the bitrate of the data.

#### ViewRight Mac Player

- Ported basic functions of the PC player to Mac OS X in C++, using ffmpeg and OpenGL.
- Principal engineer in charge of the design and development of the front-end user interface using Objective-C/Cocoa, and integration with the back-end C++ code for playback control and display of the video.

## Northrop Grumman

---

### Senior Software Engineer

San Diego, CA  
May 2005 - April 2007

#### Gateway Manager

- Software Engineer in charge of adding the Variable Message Format (VMF) capability to the Gateway Manager product line for both the Battlefield Airborne Communications Node (BACN) and the Joint Translator Force (JXF) projects.
- Wrote requirements and designed and implemented an Object Oriented approach for handling VMF messages and VMF message translation. Ported a customer-provided VMF message parser from a UNIX-based implementation to Windows and Visual C++ 6.0.
- Provided continued support for VMF as well as other Gateway Manager capabilities throughout the maintenance and Spiral 2 phases of the BACN and JXF projects.

San Diego, CA  
April 2001 - May 2005

### Software Engineer and Technical Lead

#### Integrated Tactical Avionics System (ITAS).

- Software Technical Lead for the Color Multi-Function Display (CMFD) component of the SH2-G(A) Helicopter's ITAS. Provided technical direction to the CMFD team, oversaw all CMFD-related software activities and coded in a number of different areas of the CMFD, including development of the initial CMFD prototype.
- Designed and developed numerous tools in Ada95, awk, Python and various shell scripting languages used to facilitate the automated production of documentation used in the project's design process.
- Involved in writing Use Cases, Sequence Diagrams, ICD messages and SRS requirements for the project. Created & gave presentations at design meetings to customer on variety of system topics.
- Administered, setup and maintained the primary server for the SH2-G(A) project, running Solaris.

## Interwork Institute

---

### Systems Administrator

San Diego, CA  
September 1998 - April 2001

- Administration, setup and maintenance of primary server running Solaris, and backup server running Linux; developed software and scripts to automate routine server functions.
- Supervised technical support team to provide technical/network support to 50+ personal computers and users; specified requirements for software/hardware purchases; interfaced with campus telecommunications and network services to enhance network performance.
- Developed courseware tools and provided tech support for distance learning organization of over 300 students.

## Soil Ecology and Restoration Group

---

### Web Master / Technical Support

San Diego, CA  
March 1997 - January 1999

- Created and maintained websites for SERG and other projects.

- Created message board for discussion of desert restoration techniques.
- Created logos and other graphics used on this site.
- Provided technical support for roughly 20 Macintoshes.

## iPhone Development

---

### ShutTheBox

- Updated and redesigned the user interface to the classic pub game "Shut the Box" to offer a more iPhone-appropriate interface, while still maintaining the basic game-play mechanics.
- Sole designer and developer, from game-play conception to deployment.
- Created all graphics used by the ShutTheBox game.
- Deployed to the iPhone App Store April 2009 - over 3000 downloads in the first month.

## Professional Details

---

### Programming Languages

- Most Experienced with C/C++, Ruby, Ada 95, Objective-C/Cocoa and Python.
- Additional Familiarity with Java, Perl, Lisp, Pascal, several shell scripting and various other languages.
- Very adept at picking up new languages.

### Technologies and Tools:

- ActiveX, HTML, XML, JavaScript, CGI programming, various source control utilities (CVS, SVN, etc), Cloakware Security Suite, OpenSSL.

### Trainings

- Software Architecture Series by Carnegie Melon's SEI (2006)
- Software Product Line Series by Carnegie Melon's SEI (2006)
- Object-Oriented Analysis and Design Using the UML (2001)
- Fundamentals of Rational Rose v2001 (2001)

### Security Clearance

- Inactive, Secret

## Education

---

- **San Diego State University**, B.S., Computer Science, Mathematics Minor (1996 - 2001)
  - Graduated with Distinction, Magna Cum Laude
  - Awarded "Most Outstanding Computer Science Student" for 2001
- **San Diego State University**, Post-Graduate work, Computer Science (2005 - 2007)

## Activities

---

- Coached the SDSU participants of the Association for Computing Machinery (ACM)'s Regional Programming Contest 2002, 2003 and 2004.
- Participated and placed in the ACM's Regional Programming Contest 1998, 1999 and 2000.
- President of the Association for Computing Machinery, SDSU Chapter, 2000 to 2001 (other positions held include Vice President, 1999-2000; Treasurer, 1998-1999; and Web Master, 1998).
- Assisted in the design, building and administration of San Diego State University's Computer Science Lab consisting of 24 Linux machines.
- Improvisational Comedy Experience through the National Comedy Theatre (since 2007).