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Projects & Experience

Electronic Arts

8/2011 - Present

Redwood City, Ca - OCCO

- **Untitled Project**
 - Using: Video Streaming, NodeJS, HTML5, iOS, PhantomJS, MySQL5, Riak, AWS
 - Lead Architect, Technical Director, and Server Engineer.
 - Defined & Documented API's, network architect and created code samples for developers to use the backend services.
 - Developed all backend services and deployment system. Developed monitoring, command & control system with frontend.
- **R&D HTML5 Game (Strike Fortress)**
 - Used: NodeJS, HTML5, JSON, Javascript
 - Client and server side Network system for multi-browser using WebSockets.
 - Load tested mobile servers to handling thousands of concurrent WebSocket connection to a single game session.
 - Command and control system to monitor, manage and configure server processes in real-time.
 - Polished game server developed by a team of CMU students, for a SandBox at Google I/O 2012.
 - Documented development process and Network system.
- **Researched NoSQL solution for large scale distributed systems**
 - NoSQL: Cassandra, Riak, Mongo, MapReduce: Hive, Pig, Riak (Javascript)
 - Reviewed technology, created basic cluster, tested performance, stability and map reduction.
- **Monitoring Tool**
 - Used: Oracle, Drupal, LDAP, PHP, Javascript, JSON
 - Lead developer, Server setup, pack and deploy scripts. Developed API, backend PHP scripts, client side Javascript and some HTML/CSS.

ISI - Intelligent Agents for Large Scale Security Simulation

3/2010 - 7/2011

Marina del Rey, Ca

- Assisted with development of the National Cyber Range, part of DARPA's contribution to the Comprehensive National Cyber Initiative.
- Developed agent to virtual communication API, command and control system, maintained documentation and integrated source code from another collaborating group.

Post Grad Research - Digital Video Watermarking and Attacks

9/2007 - 9/2009

Bakersfield, Ca

- Used: C++, GSL, libPNG, FFTW, Eclipse, Xcode on Linux and OS X
- Batch processes PNG images, converts discrete pixel values to continuous coefficient values (DCT using FFT)
- Converts continuous coefficient values to discrete pixel values (CDT using FFT), writes PNG image
- Adds watermarks to a series of images using various methods
 - Gaussian, Uniform, or Orthogonal normal
- Attacks watermarks in a series of images using various methods
 - Bootstrap
 - Time-Series Intra-Video Collusion
- Calculates the similarity values of the watermark and attacked images.
- Creates difference images of attacked and watermarked from original, for visualization.

Lecturer, California State University of Bakersfield
Department of Computer Science, Bakersfield, Ca 9/2007 - 6/2009

Post Grad Research - Chemical Plume Tracing System 1/2007 - 9/2009
Bakersfield, Ca

- Used: C++, OpenGL, Webots, MS VS v6, Xcode on OS X and Windows
- Converted simulation system from 2D to 3D
- Supports multi-platforms (OS X and Windows tested)
- Redesigned application to be dynamic and scalable
- Allow for multiple plume, vehicle, and different exec modes (sim or controller)

DIVR 6/2005 - 10/2005
Bakersfield, Ca

- Researched digital video processing methods
 - MPEG4, MJPEG and AVI
- Developed simultaneous multiple digital video playback software
 - Used: C++, FFMPEG, libJPEG, MS VS 2003, and wxWidgets for Windows platform
 - Supported a dozen video formats, OpenGL/DirectX hardware acceleration, and various image formats.
 - Created user instruction manual, installer application and CD
- Improved/Created server-side software
 - Used: PHP4, C/C++, FFMPEG, POSIX, and CVS for Linux
 - Updated and maintained code base. Created live encoding/decoding video daemon. Created MPEG4 to AVI converter
- Tested/debugged server-side and client-side software

CiSMS 9/1999 - 7/2004
Fresno, Ca

- Co-Owner - President and Lead Software Engineer
- Created a user friendly e-learning/presentation development and customized presentation viewing software
- Tested/debugged all server-side, and client-side software developed
- Specialized in Modular based designs

Tools	Languages: C/C++, PHP, Javascript, HTML(4/5), JSON, XML, CSS, C#, Java, Bash, \LaTeX
	Framework: OpenGL, DirectX, .NET, MFC, wxWidgets, POSIX
	Protocol/Lib: HTTP, WebSockets, MPEG4, AVI, JPEG, PNG, DCT, FFT
	OS: Linux, Mac OS X, Windows
	Software: Eclipse, MS VS (6.0, 2003-2008), Xcode, Perforce, Git, SVN, CVS, NodeJS, Drupal, Apache, Tomcat, Ant, R, Photoshop
	Database: MySQL, Oracle, Riak, Cassandra, Mongo

Education M.S. in Computer Science - General 9/2009 - 5/2011
University of Southern California, Los Angeles, Ca
Honors: Cum Laude
GPA: 3.6/4.0

B.S. in Computer Science 9/2004 - 9/2007
California State University Bakersfield, Bakersfield, Ca
Honors: Magna Cum Laude
Award: Computer Science - Outstanding Graduating Senior of 2007
GPA: 3.8/4.0

References Available upon request.