Jake Van Alstyne

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SUMMARY

Software Engineer
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iOS, Mac OS X, Web
3D Graphics, Data Vis, OpenGL
C, C++, Obj-C

EDUCATION

Master of Science - Computing - University of Utah
2013

- Graphics and Visualization
- Improvements to rational surface analysis in toroidal magnetic confinement fields

Bachelor of Science - Chemical Engineering - University of Utah
2008

- Dean's List
- High Temperature Fixed Bed Mercury Sequestration on a Non-Carbonaceous Substrate

RECENT PROJECTS

Selfie for iPhone app
5/2014-
Current

- An innovative social networking app for face to face conversations

OnCue Mac OS X app and iOS companion app
10/2011-
Current

- Motion detection and remote video streaming
- GLSL, GPUImage

OurPlan iPad app
9/2013-
Current

- Construction scheduling application
- Multiple Core Data stores, remote synchronization
- Custom Calendar UI / UX design / implementation

Lacrosse Stats

- Sports statistics application
- Core Data, Remote data retrieval, Premium features via In App Purchase
- Custom UI / UX design / implementation

Izon iPad / iPhone app

- Remote video streaming application
- Core Data, P2P / Proxy Streaming
- Custom UI / UX design / implementation

EMPLOYMENT

Senior iOS Developer, Selfie Inc.

- Core iOS app development. Bug fixes, feature enhancements, etc.

iOS Engineer, USANA

- Improved enterprise reporting modules in internal iOS application, created a custom tree based reporting view
- Short term contract position

iOS Consultant, NTT Data

- App development and maintenance
- Feature enhancements, bug fixes, repository / App Store management

iOS Engineer, Stem Innovation, Salt Lake City, Utah

- IZON iOS App Architecture
- Objective-C main app, C and C++ core modules
- Asynchronous RESTful web-service interaction
- Local/remote viewing
- Live multiple-source data streams

Independent & Freelance iOS / Mac OS X / Web developer

5/2008-
Present

- Freelance developer for hire. I've built dozens of custom iOS, Mac OS X and Web applications for clients.
- pms.leadsys.co - A lead generation and tracking web application I built for one of my clients, uses Python, PHP, Zend MVC framework.
- www.UnitsOfCode.com - A web application I designed and built for myself, it is a public webservice for storing and sharing code snippets online, built using JQuery, Python, PHP and CodeIgniter MVC framework. Planned future improvements include providing an API for developers.
- PictureThis! - A free iOS App I created using StoreKit. It connects to a private server using AJAX and JSON to sell and distribute packages of scenic photographs from around the world.
- OnCue - A motion activated surveillance system for the iSight camera.
- Visit EggDevil.com for links to the App Store
- Full product development from concept to deployment on App Store
- Objective-C, Cocoa, Cocoa-touch, UIKit, CoreData, StoreKit, QTKit, GameKit, CoreVideo, OpenGL, OpenGL-ES, Cocos-2D, etc

Software Engineer, K'nowbe Works, LLC, West Valley, Utah

4/2012-
12/2012

- Main product development, C++, Windows API, MFC, COM, OpenGL, OSG & GLSL
- I improved their core graphics engine before using those improvements to develop visually striking fully interactive 3 dimensional engineering design tools. For instance, I built a rapid geodata contouring package. I also built intelligent pipe laying design tools which used proprietary equipment modeling software resulting in incredible realism.
- Agile development team using TFS as our revision control and a custom in house testing harness for unit tests and TDD.

Software Engineer, Flexsim Simulation Products, Orem, Utah

11/2011-
3/2012

- Main product development, C++ and custom engine scripting (FlexScript)
- I was on the main product development team, tasked with maintaining and upgrading the code using C++ as my primary language and using the Windows MFC API. I made a series of sweeping improvements to FlexSim's GUI, as well as changes to the core application functionality. Additionally, I created a suite of performance and unit tests for the FlexSim code base. I maintained the code in their mercurial repository and we worked as an Agile team.

Software Engineer, Software Development Center, University of Utah

6/2010-
9/2010

- Custom web portal development
- Using only JQuery, HTML, and CSS, I developed a dynamic user interface where clients could manage their accounts and design layouts for their advertising.

OpCode LLC - iPhone developer

5/2008-
8/2008

- CarSplosion
- I developed the visual gimmicks, including firebombs and explosions for this mini-game using Objective-C, Cocoa-touch, Cocos2D and chipmunk-physics.

Research Assistant, University of Stuttgart
Institut für Verfahrenstechnik und Dampfkesselwesen (Institute for Process Engineering and Power Plant Technology)

8/2007-
1/2008

- Student Research Exchange
- I worked with graduate students to progress their research with sulfur emissions. I did various lab work and worked with typical industrial lab equipment. At one point I was given a malfunctioning BET scanner, which I repaired within a week and used to analyze soot samples for the researchers.

Undergraduate Research Assistant, University of Utah

10/2006-
12/2008

- High temperature fixed bed mercury sequestration research on a non-carbonaceous substrate.
- I researched mercury sequestration on a novel non-carbonaceous mineral sorbent. My results showed promise for the material, and I was invited to present a poster at the undergraduate student competition in San Francisco at the AIChE convention in 2007.

DEVELOPMENT SKILLS

Programming

- Object Oriented Design / Architecture
- HTML5, CSS3, JavaScript, PHP, Python
- Bootstrap, CodeIgniter, JQuery
- MySQL, SQLite, PostgreSQL
- C, C++, Objective-C
- Java, C♯
- OpenGL, GLSL
- Other skills:
  - Scientific Computing & Visualization
  - Numerical Techniques
  - Cocoa, Cocoa-touch, Windows API, MFC, COM, SQL, PHP, bash, zsh, AppleScript, LATEX, MATLAB, Blender, Git, SVN, Agile, Unit Testing, JUnit

TEACHING

University of Utah, Salt Lake City, Utah USA

- Graduate Instructor   2011
    - CS 1400 - Introduction to Computer Science
- Teaching Assistant
    - CS 3810 - Computer Organization
    - CS 2420 - Computer Science II   2010
    - CS 2420 - Computer Science II EAE (Engineering Arts and Entertainment Track)
    - CS 1410 - Computer Science I EAE (Engineering Arts and Entertainment Track)

RESEARCH   2011

- Exploration of the Material Point Method on Adaptively Refined Meshes with Hanging Nodes
- Rational Surface Extraction in Toroidal Magnetic Field Simulations   2008
- High Temperature Fixed Bed Mercury Sequestration on a Non-Carbonaceous Substrate

HONORS   2007

- Red Hanger Scholarship
- John Zink Award   2006
- Chemical Engineering Departmental Full Tuition Scholarship   2001
- University Honors at Entrance Scholarship