

# JAKE VAN ALSTYNE

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## SUMMARY

Software Developer

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iOS, macOS, Web  
Interactive 3D Graphics & Data Visualization Specialist  
Objective-C, Swift, C, C++

## EDUCATION

M.SC. - COMPUTING - UNIVERSITY OF UTAH

2013

- Graphics and Visualization
- [Improvements to rational surface analysis in toroidal magnetic confinement fields](#)

B.SC. - CHEMICAL ENGINEERING - UNIVERSITY OF UTAH

2008

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

## OPEN SOURCE PROJECTS

### BTCMONITOR

- A simple OS X menubar application for showing current BTC prices
- [BTCMonitor on GitHub](#)

### BTC-WALLET-HASHCHECKER

- A lightweight OS X command line utility for attempting rapid password permutations on a given encrypted BTC wallet
- [BTC-wallet-hashchecker on GitHub](#)

## PROFESSIONAL PROJECTS

### INSTASIZE

10/2015-  
7/2017

- A photo editing and resizing app
- Filters, Collages, Overlays, Backgrounds, etc
- In app purchases for filter packs

<b>LOON</b>	10/2015-12/2015
<ul style="list-style-type: none"> <li>• A video feed based social network</li> <li>• NodeJS backend</li> </ul>	
<b>BRELLA</b>	12/2015-3/2016
<ul style="list-style-type: none"> <li>• A social link sharing app</li> <li>• Built entirely in Swift, using Parse backend</li> </ul>	
<b>SELFIE FOR IPHONE APP</b>	5/2014-9/2015
<ul style="list-style-type: none"> <li>• An innovative social networking app for face to face conversations</li> </ul>	
<b>ONCUE MAC OS X APP AND IOS COMPANION APP</b>	10/2011-Current
<ul style="list-style-type: none"> <li>• Motion detection and remote video streaming</li> <li>• GLSL, GPUImage</li> </ul>	
<b>OURPLAN IPAD APP</b>	9/2013-4/2015
<ul style="list-style-type: none"> <li>• Construction scheduling application</li> <li>• Multiple Core Data stores, remote synchronization</li> <li>• Custom Calendar UI / UX design / implementation</li> </ul>	
<b>LACROSSE STATS</b>	11/2013-2/2014
<ul style="list-style-type: none"> <li>• Sports statistics application</li> <li>• Core Data, Remote data retrieval, Premium features via In App Purchase</li> <li>• Custom UI / UX design / implementation</li> </ul>	
<b>IZON IPAD / IPHONE APP</b>	5/2013-9/2013
<ul style="list-style-type: none"> <li>• Remote video streaming application</li> <li>• Core Data, P2P / Proxy Streaming</li> <li>• Custom UI / UX design / implementation</li> </ul>	

## EMPLOYMENT

<b>SENIOR IOS DEVELOPER, MUNKEE APPS LLC, SANDY, UTAH</b>	10/2015-7/2017
<ul style="list-style-type: none"> <li>• Feature enhancements and bug fixes for existing products</li> </ul>	

- SENIOR IOS DEVELOPER, SELFIE INC., REMOTE 5/2014-9/2015
- Core iOS app development. Bug fixes, feature enhancements, etc.
- IOS CONSULTANT, USANA, WEST VALLEY, UTAH 2/2014-6/2014
- Improved enterprise reporting modules in internal iOS application, created a custom tree based reporting view
  - Short term contract position
- IOS CONSULTANT, NTT DATA, REMOTE 9/2013-8/2015
- App development and maintenance
  - Feature enhancements, bug fixes, repository / App Store management
- IOS DEVELOPER, STEM INNOVATION, SALT LAKE CITY, UTAH 5/2013-9/2013
- 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, REMOTE 5/2008-Present
- Designed, developed and deployed numerous iPhone and Mac OS apps for clients and independently. Submitted dozens of new apps and updates to the App Store. Technologies utilized include Cocoa and Cocoa-touch, UIKit, CoreData, StoreKit, WebKit, SceneKit, QuartzCore, CoreVideo, AVFoundation, QTKit, GameKit, CoreVideo, OpenGL, OpenGL-ES, Cocos-2D, etc
  - **OnCue** - A motion activated surveillance system for the iSight camera with remote viewing capability via the companion iOS app.
    - Full product development from concept to deployment on App Store.
- GRAPHICS 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.

- WINDOWS DEVELOPER, 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 code base.
- WEB DEVELOPER, 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.
- IOS DEVELOPER, OP CODE LLC, SALT LAKE CITY, UTAH 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 8/2007-1/2008  
 INSTITUT FÜR VERFAHRENSTECHNIK UND DAMPFKESSELWESEN (INSTITUTE FOR PROCESS ENGINEERING AND POWER PLANT TECHNOLOGY)
- 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 research team.
- 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.

## SKILLS

### SOFTWARE DEVELOPER

- Building Intuitive Software
- Object Oriented Design / Architecture
- Focused, Elegant, Self-Documenting Code
- Detailed UI, UX Design
- 3D Interactive Graphics - OpenGL, GLSL, CUDA
- Full Stack Developer - Back to Front Architectural Design and Development

## PROBLEM SOLVING

- Numerical Techniques
- Scientific Computing & Visualization
- CAGD, Image Processing
- Signal Processing
- Complexity Analysis
- Data Analysis / Visualization
- Geometric Design

## TECHNOLOGIES

- Objective-C, Swift, C, C++
- HTML5, CSS, JS, PHP, Python
- MySQL, SQLite, PostgreSQL
- OpenGL, GLSL
- Cocoa, Cocoa-touch, Windows API, MFC, COM, bash, zsh, AppleScript, LATEX, Git

## OTHER

- Fluent in German
- 20 years experience playing guitar

## TEACHING

### UNIVERSITY OF UTAH, SALT LAKE CITY, UTAH USA

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

## RESEARCH

- Rational Surface Extraction in Toroidal Magnetic Field Simulations 2011
- Exploration of the Material Point Method on Adaptively Refined Meshes with Hanging Nodes 2008
- High Temperature Fixed Bed Mercury Sequestration on a Non-Carbonaceous Substrate

## HONORS

- Red Hanger Scholarship 2007
- John Zink Award 2006
- Chemical Engineering Departmental Full Tuition Scholarship 2001
- University Honors at Entrance Scholarship