Jake Van Alstyne

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BRIEF SUMMARY

Software Developer / Programmer / Engineer / Hacker
Web, iOS, Mac OS X, 3D Graphics, Visualization
C, C++, Obj-C
HTML, CSS, PHP, MySQL
CLI, Emacs, Git, Apache
5+ years professional experience

EDUCATION

2008

- Bachelor of Science - Chemical Engineering

  - University of Utah
  - 3.58 GPA

EMPLOYMENT

Independent / Freelance – iOS / Mac OS X developer

5/2008-
Present

- Freelance developer for hire. I've built dozens of custom iOS and Mac OS X applications for clients.
- PictureThis! - A free iOS App I created using StoreKit. It connects to a private server to sell and distribute packages of scenic photographs from around the world.
- OnCue - A free and open-source Mac OS X app I created which allows the user to control their iSight camera with timers, as well as by detecting motion in the room. I developed this feature using shaders in CoreGraphics.
- 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

OpCode LLC - iPhone developer

5/2008-
8/2008

- CarSplosion
- I developed the visual gimmicks for this mini-game using Cocos2D and chipmunk-physics.

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 have produced a set of visually striking 3D interactive industrial design tools as plugins to a proprietary 3D graphics engine in Windows 7 that is generating millions of dollars of profit for K'nowbe. The tools I've developed include, among other advanced techniques & algorithms, bidirectional A* heuristic path finding, gaussian smoothing, image processing, large point cloud rendering, ray tracing, GPU shaders, and a fine GUI polish.

- In addition to developing tools that are in and of themselves sellable products, I help maintain existing code, find and fix bugs, manage the build and revision control, as well as contribute knowledge and experience.
- Agile development team using TFS as our revision control and a custom in house testing suite for unit tests and TDD.

Software Engineer, Flexsim Simulation Products, Orem, Utah

- Main product development, C++ and custom engine scripting (FlexScript)
- I was on the main product development team, tasked with maintaining and upgrading the code. I was asked to make a series of sweeping improvements to FlexSim's Windows MFC GUI. Additionally, I created a suite of performance and unit tests for the FlexSim code base. I maintained the code in their mercurial repository and generally improved various components.

Software Engineer, Software Development Center, University of Utah

- Custom web portal development
- Using JQuery, HTML, and CSS, I developed a user interface where clients could manage their accounts and set up layouts for their software.

Research Assistant, University of Stuttgart
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. I did various lab work and worked with typical industrial lab equipment.

Undergraduate Research Assistant, University of Utah

- 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
- C, C++, Obj-C
- Java
- C♯
- Python
- HTML, CSS, JavaScript, JQuery
- OpenGL, GLSL
- Ruby on Rails
- PHP
- MySQL, SQLite
- Additional 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