

# Silicon Valley Software Engineering Jobs

by Elaine Haight, CTIS Faculty, Foothill College  
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As the first part of my one quarter Professional Development Leave, I surveyed the large local employers' job boards, business stories in the national media, and online recruitment networks. This report gives my results, which will dictate my program of study for Spring 2011. I will repeat this process (survey job listings, learn new skills, prep new classes) during Spring 2012 and Spring 2013.

When looking at job listings, I focussed on the following job titles:

- software engineer
- software quality assurance (SQA)
- technical support
- customer service representative for a technical product

## I. Employers' Online Job Listings

I visited the online job boards of local employers who had hired my students in the past. Many of the current employees of these companies take my classes regularly. All of the companies I looked at had *many* openings for each of the previously listed job titles.

Below are the technical skills that are required for the various job titles listed above. Every single job listing also required good communication skills and the ability to work in a team. I use Scenario-Based Learning in my classes, where students work in teams for a fictitious client and present their solutions to the rest of the class. Therefore, no matter which skills I am teaching, the students get to improve their communication skills.

### A. Google, Mountain View:

C/C++, Java, Python, Javascript/AJAX  
mobile systems and applications  
web application development  
information retrieval and data mining  
user interface development  
test automation

### B. Apple, Cupertino:

Python, Javascript, Objective-C, C/C++  
Unix  
testing experience

### C. FaceBook, Palo Alto:

XML, HTML, CSS, Javascript, AJAX  
MySQL, Oracle, Salesforce  
SOAP, REST, SAAS, LAMP  
Apache, Linux  
Shell, Python, Perl, PHP, C++, Ruby, Javascript, Erlang  
Java  
job for "Web Application Engineer" which specifies HTML 5

**D. Adobe, San Jose:**

jQuery  
Flash/Flex, HTML/Javascript  
Java/J2EE, C/C++  
Mobile Operating systems  
multimedia technologies  
Open GL  
Amazon web services, Google App Engine  
Web frameworks (Spring, Tomcat, Ruby, etc)  
OSGI  
understanding of social media

**E. Salesforce, San Mateo:**

Java (SE and EE), C++, C#  
Java JSF, Jsp  
databases, SQL and Oracle  
web technologies and services  
Javascript, Perl, Python, Ruby, Shell  
JUnit, Selenium

**F. eBay, San Jose:**

data mining  
C#, Java, C++  
Shell/ Perl scripting  
Oracle

**G. Netflix, Los Gatos:**

Java, PHP, Python  
HTML, HTML 5, CSS, Javascript, JSON  
jQuery  
Selenium, JUnit, Perforce

**H. Zynga, Los Gatos and San Francisco:**

C/C++, Java, Python, Javascript/AJAX  
web applications  
server side software engineer using LAMP  
database driven web technologies  
HTML, CSS, Dreamweaver

jQuery  
FaceBook API  
Mobile software development  
DOM Model  
OAuth, OpenSSL  
Linux, MySql  
Python, Javascript/AJAX

Other company's job listings that I checked, which just repeated the same job titles and skills as above:

**Oracle** (Menlo Park), **LinkedIn** (Mountain View), **Microsoft** (Mountain View), **YouTube** (San Bruno).

I did not find a single company that was not hiring in this field.

## II. The View from the National Media

A. NPR, Morning Edition; "Want a Job? You Ought To Be A Tech Geek"; 4 March 2011.

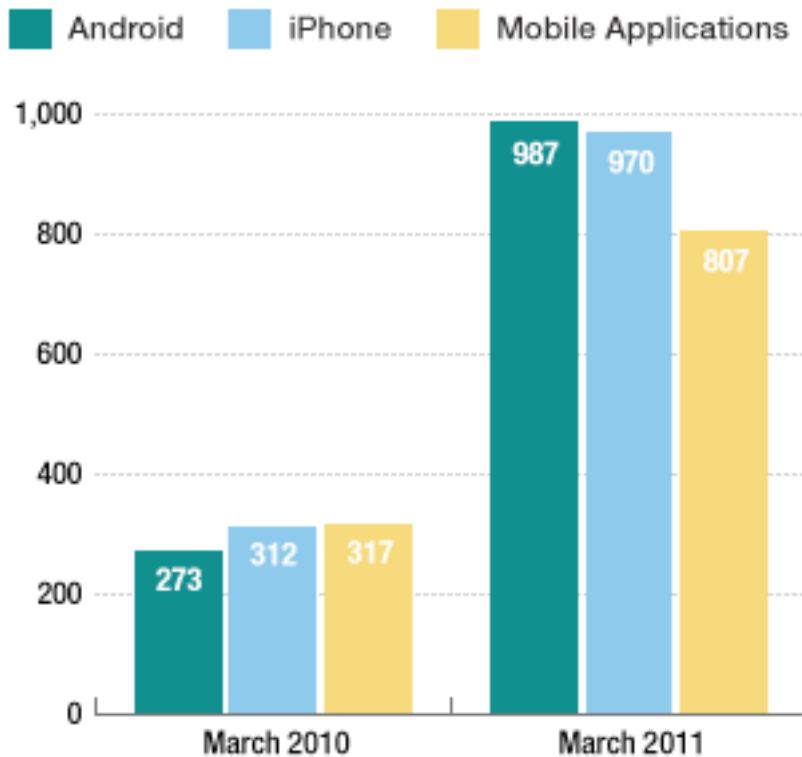
<http://www.npr.org/2011/03/04/134236010/want-a-job-you-ought-to-be-a-tech-geek>

The following graph just shows the growth in job listings for software engineers who can develop applications and websites that can be run on mobile devices.

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## Help Wanted: Web, Mobile App Developers

The number of job listings containing these tech-related keywords has skyrocketed



Source: Dice.com

Credit: NPR

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**B. New York Times** Business section; "In a New Web World, No Application Is an Island"; 27 March 2011.

<http://www.nytimes.com/2011/03/27/business/27unboxed.html?scp=1&sq=in%20a%20new%20web%20world,%20no%20application&st=cse>

HTML 5 represents "the next big step in the progress of the Web", says Jeffrey Jaffe, chief executive of the World Wide Web Consortium ("W3C"), which guides the development of technical standards.

This is important because it shows that HTML 5/ CSS 3/ Javascript will be the standard way to develop websites of all types in the future. Standards are so

important to me, because I don't want to invest my time learning a new skill and prepping a new class that will not be popular for the long term.

### **C. Wall Street Journal**

"Mobile App Talent Pool is Shallow" 15 April 2011

<http://online.wsj.com/article/SB10001424052748704547604576263200170918660.html>

**D. Datamation;** "IT Jobs: What Was Hot in Online Hiring in 2010 and What's Ahead?"; 8 December 2010.

<http://itmanagement.earthweb.com/career/article.php/3916261/IT-Jobs-What-Was-Hot-in-Online-Hiring-in-2010-and-Whats-Ahead.htm>

The top five "Hot" list of jobs skills for the year is headed by Search Engine Marketing which saw a 53 percent jump in demand, followed by iPhone, Google App Engine and HTML developers.

## **III. Online Recruitment Networks**

Instead of looking at Monster.com, Craigslist.org and Dice.com, I searched for the aforementioned jobs at indeed.com. Indeed.com is a compilation of the other job boards and the company job listings as well.

I searched for "HTML Javascript" and found hundreds of jobs listed within 25 miles of Palo Alto. Though I didn't compile these results, the skills listed for those jobs seemed in line with the others I found on the companies' individual job boards.

## **IV. Conclusion**

Software is moving from being deployed on desktop computers to being run from the cloud. The technical skills required for engineers to develop, test and support this new software is also changing.

The new software engineering jobs are either on the (web) server side or on the client (browser) side. Server side development includes creating and managing databases and operating systems. Most of these jobs require Java, Oracle and SQL. Client side software is written in Javascript and HTML, since these are the only languages that browsers can run directly. I have always been oriented toward application software development, so I will continue to focus on the client side.

Mobile devices are just a special kind of client. There are two different ways to program a mobile device: 1) You can write an app for a specific mobile device that won't run on any other mobile device, or 2) you can write an app in HTML 5 and CSS 3 that will run on virtually any mobile device. The downside to option 2) is that HTML 5 cannot access special features of a specific mobile device (e.g. the camera.)

Any company with a web presence will have to develop and maintain a separate version of their website to run on mobile devices. Most of these companies will make the mobile version of their site in HTML 5 and CSS 3, with Javascript.

I have been teaching web application development (COIN 71 Ajax) for the past four years. I now need to learn how to develop web applications for mobile devices, so I can teach that in a new class. My students have already been asking for this class, and this jobs survey report supports the HR need in local industry.

Javascript (programming language) will be required in web development for the foreseeable future. My COIN 71 Ajax class is really an advanced Javascript class, but our college does not have a full time instructor teaching intermediate Javascript. We have had considerable trouble with part time instructors teaching this important class. Therefore, my second project for this one quarter of PDL (Spring 2011) will be to prepare COIN 70B, Intermediate Javascript.

I will also be putting a considerable amount of time into learning and preparing to teach some critical developer tools including Eclipse, JQuery, JSLint, and a versioning system. These are used in all of the local companies.

I am excited about this opportunity to learn new skills and provide our community with an appropriately qualified workforce.