Sachin Agarwal

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OBJECTIVE

To design, build, and ship high quality desktop and web based applications for consumers, especially in the fields of music, blogging, and e-commerce.

COMPUTER SKILLS

- C, C++, Objective-C, Cocoa, Java, Perl, Assembly, OpenGL, SQL, HTML
- Desktop development using IDEs such as Xcode and Eclipse
- Command line development using Emacs, gdb
- Web development using Java Struts, Ruby on Rails

WORK EXPERIENCE

6.2001-Present   **Real-Time Engineer, Final Cut Pro**, Apple Computer, Cupertino, CA

I have been working on the video playback and real-time effects engine for this nonlinear video editing application. For our last release, I had a key part in re-writing the entire playback engine from the ground up, including scheduling video data from disk, decompressing frames, applying effects, and sending them to a video device, all in real-time.

For Final Cut Pro 5, I was also responsible for Dynamic RT, a feature that examines the movie constructed by the user and the capabilities of their machine, and scales back the quality or frame rate as needed in order to *guarantee* smooth playback. This involves a complex system of profiling all the real-time effects, and being able to predict the capabilities of a machine before the user ever hits play. No other competing product tackles this task. I decide what can be done, and how best to balance system resources.

I also wrote much of the video output system that enables Final Cut Pro to do native MPEG2 (long gop) editing. This code examines a movie constructed by the user, which contains cuts and effects, and determines the absolute minimum areas that need to be encoded to generate a valid MPEG stream for output. Avoiding unnecessary encoding saves the users a lot of time, and improves video quality.

While I have been on the team, we have added support for numerous formats, allowing users to edit high quality SD and HD video natively. I also worked on some of the incredible performance enhancements we have made, taking us above and beyond our competition, minimizing the time required for rendering video. I have done a lot of work creating new real-time effects, increasing performance of existing effects, and adding new features that increase the productivity of customers.

In addition to the graphics and video technology I have learned about while working on Final Cut Pro, I learned the skills necessary to work on a large team and ship large applications. I learned how to write performance critical code. I have designed and implemented user features in situations where we were designing a new workflow, as well as features where users already had an existing workflow for us to conform to.

Since January 2006 I have been working remotely for my Cupertino based team from New York City. I am self-motivated, and can communicate well over email, iChat, and phone. Working remotely demonstrates my ability to perform my duties without constant, direct supervision.

6.2000-9.2000   **Intern**, Sun Microsystems, Cupertino, CA

Wrote several tools for the Java Compatibility Tools group. These tools include an API that speeds up the loading time of the 18,000 test suite from 15 minutes to 1 minute. This was done using highly compressed binary files and many optimization techniques. I also wrote an API that allows several copies of the test application to run simultaneously, all of them writing to a single log file. I had to make sure all the results were up to date, and there were no "collisions." My work focused around optimizing APIs, allowing a faster, more responsive GUI in the next release of the application.

6.1999-6.2000   **Software Intern**, PeopleMover Inc., Manhattan Beach, CA

Worked on installing and configuring Oracle databases for PeopleMover's staffing software. Wrote several programs in Visual Basic and PL/SQL that provided clients a user-friendly, GUI based way to perform tasks previously done only by trained DBAs. This included a program that took a file of résumés and extracted contact information to enter in the database.

PERSONAL PROJECTS

6.2005-Present	**Balance**, http://apps.isachin.com, San Francisco, CA
	A simple Cocoa application to help you reconcile your bank accounts. Enter all your bank transactions, check the box next to the ones your bank has acknowledged, and match your bank balance in seconds.
6.2004-6.2005	**meepster**, http://www.meepster.org, San Francisco, CA
	Developed and launched an online classifieds system. meepster is designed to make the buying and selling process easier and safer by providing features such as accounts, alerts, a FAQ on each listing, local search, and a homepage to manage it all easier. meepster has been deployed in several college campuses and is gaining popularity.
11.2002-11.2003	**Wimpus**, http://www.wimpus.com, San Francisco, CA
	Designed, created, and shipped a java application that listens to multiple internet radio streams, downloads them, splits them into individual songs, and archives them for users. Application was centered around automation and complete easy of use. Three clicks and a few hours later, users would find hours of new music recommended to them.

EDUCATION

9.1998-6.2002	**Stanford University**, Stanford, CA
	Bachelor of Science in Computer Science, June, 2002.
	Coursework: Operating Systems, Compilers, Networking, Databases, Graphics, AI, Computer Architecture, Computer Science Theory, Logic, Algorithms, Internet Programming, Object Oriented Systems Design, Programming Paradigms, Electronics, Physics, Multivariable Calculus, Consulting.
1.2001-6.2001	**Section Leader**, Computer Science Department, Stanford University, Stanford, CA
	Taught a section of about a dozen students for an introductory computer science class. Requires interaction with students and good communication skills.
9.1998-6.2002	**Cluster Technician**, Residential Computing, Stanford University, Stanford, CA
	Maintain computer clusters in student residences. I was the contact for hundreds of students. Job requires patience and troubleshooting ability and communication with students.
9.1994-6.1998	**West High School**, Torrance, CA
	Valedictorian, Bank of America Scholar, Target Scholar, National Honor Society, California Scholarship Federation, Awards in Computer Science, Math, English, Foreign Language, Biology.

PATENTS FILED

| 4.2005 | **Dynamic Real-Time Playback** |
| 4.2005 | **Selective Re-encoding for GOP Conformity** |