Nathan Roberts

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OBJECTIVE: ENROLLMENT IN A DOCTORAL COMPUTER SCIENCE PROGRAM, FALL 2008

PROFILE

I started Spindrift Consulting, a computer consulting and programming company, in the summer of 1998. Since then, I have produced several major projects for clients, detailed below. I recently participated in an internship at Google, between semesters of study at Baylor University, where I will complete a Master's degree in Computer Science, with anticipated graduation in the summer of 2008. I find fundamental research, particularly in areas of computer science that border on mathematics, very interesting, and I delight in teaching. I now plan to pursue a Ph.D. in Computer Science with the hope of teaching and doing research at the university level.

EDUCATION

Baylor University - Master's in Computer Science, Jan 2007 - present
• in progress (Spring 2008, enrolled in Machine Learning, Advanced Software Engineering, and thesis work)
• thesis in software engineering (work thus far has centered on efficient weavings of arbitrary aspect sequence diagrams)
• anticipated graduation in August 2008
• 4.0 GPA over 18 hours of graduate study

Baylor University - post-baccalaureate study, 2005-2006
• coursework in a variety of disciplines, from math and computer science to novel-writing and philosophy
• 3.94 GPA over 28 hours of study, at both graduate and undergraduate levels

Wheaton College BA, *magna cum laude* - Mathematics and Philosophy; Computer Science minor, 2001
• 3.7 GPA overall; 3.92 in Mathematics, 3.67 in Philosophy.
• 22 hours of study in literature/writing (3.76 GPA); 27 hours in theatre/communications (3.76 GPA)
• BUDAPEST SEMESTERS IN MATHEMATICS: Graduate-Level Mathematics Courses, Fall 1998
• WHEATON IN ENGLAND: A Program in Literature and Writing, Summer 1999

Illinois Mathematics and Science Academy - High School, 1996
• two-year independent study in Fractals and Chaos Theory
• taught a one-week intensive course in Fractals and Chaos Theory, January 1996 and January 1997
• taught a one-week intensive course in Fiction Writing, January 2004 and January 2005

SPINDRIFT CONSULTING PROJECTS

StopWatch Plus for Mac OS X, DesignSoft, Wheaton IL   2001-2007
Taking inspiration from DesignSoft's existing StopWatch product (a timer and time sheet application, part of DesignSoft's vertically integrated suite of timing and billing applications), created a value-added version for Mac OS X. Improvements over the previous version included: a hardware-keyed anti-piracy mechanism, ability to name timers, an arbitrary number of timers, and a rich user interface consistent with Apple's Human Interface Guidelines. Created using Project Builder (now XCode), using Apple's Cocoa frameworks, with Java as the primary programming language (with some C and Objective C for JNI and interaction with Cocoa). A complete rewrite in Objective C++ is in progress. A demo version is available from DesignSoft's web site, www.designsoft.com.

StopWatch Plus for Windows, DesignSoft, Wheaton IL   2003-2007
Using StopWatch Plus for OS X as the model, developed and maintained StopWatch Plus for Windows, using Microsoft Visual Basic .NET. This effectively consisted of porting Java code to .NET, and finding or creating .NET analogues for the Cocoa APIs used in the OS X version.

Time Sheet Manager for Mac OS X, DesignSoft, Wheaton IL 2002-2007
Working collaboratively with the engineer who wrote earlier versions of Time Sheet Manager, created a Mac OS X native version with a Cocoa user interface, written in C++, Objective-C++, and Objective C. Took over maintenance of the entire cross-platform code-base in 2005. Originally built using CodeWarrior, recently ported the Mac OS X version to XCode (with gcc 4 as the compiler). Now distributed as a "Universal Binary," which will run natively on both PowerPC and Intel-based Macintosh platforms. A demo version is available from DesignSoft's web site, www.designsoft.com.

Time Sheet Manager for Windows, DesignSoft, Wheaton IL 2005-2007
Maintained the previous engineer's code-base, diagnosing and resolving bugs. The cross-platform code makes extensive use of the Standard Template Library, and is built in CodeWarrior. A demo version is available from DesignSoft's web site, www.designsoft.com.

LineNotes for Windows, Thank You 5, New York NY 2005-2006
Designed and developed LineNotes, an original application for live theater professionals, allowing them to communicate with actors and other production staff in a more efficient, elegant manner. Written in Microsoft Visual Basic 6, major features include script interaction using Word Automation, a clear and clean user interface, hardware-keyed internet-enabled licensing and registration, and a full-featured distribution mechanism, allowing notes to be delivered by email or in hard copy. A demo version is available for download from Thank You 5's web site, www.thankyou5.com.

Automation Applications, ActiveHealth Management, New York NY 2006
Designed and developed applications to automate repetitive document editing tasks in Microsoft Word, Microsoft Excel, and Adobe Acrobat Professional. Written in Visual Basic .NET, using inter-app automation facilities, in such a way that, once processing has begun, no human interaction is required; most errors are caught before processing has begun, so that the user can make the required choices at the outset, and any errors encountered during processing are handled automatically and logged. What once cost an ActiveHealth employee two weeks of error-prone effort can now be accomplished in a few clicks and an hour of computer time.

WebObjects-based Commercial Web Site and Intranet, 800 Video Express, Lake Zurich IL 2001-2005
Using WebObjects, MySQL, and Java, created a very flexible products database and database-driven website, with non-trivial business logic, PDF pack-slip generation (using the iText library), and integration with a UPS package system and VeriSign credit card processing (using Payflow Pro). Unfortunately, due to contractual disputes between 800 Video Express and content owners, the site is offline while the company reconsiders its business strategy.

EMPLOYMENT OUTSIDE SPINDRIFT CONSULTING

Research Assistant, Baylor University, Waco TX 2007
Assisted a second-year professor as she sought to develop her software engineering research. Specific tasks included: reading current literature on model verification systems and developing PowerPoint presentations summarizing the same, and providing extensive editorial feedback on drafts of articles. I also explored in detail one author's work in the aspect-oriented composition of sequence diagrams, evaluated its algorithmic efficiency, and started work (now in progress) on the development of a more efficient alternative.

Mathematics Tutor (independent), Waco TX 2005-2007
Tutored Baylor University students mainly in calculus-related mathematics. With my help, students' grades improved dramatically. One of my GRE mathematics students saw her score on the math portion of the practice exams improve by about 200 points during the time that we worked together.

Software Engineering Intern, Google, Mountain View CA summer 2007
As part of the Google Checkout team, refactored to eliminate dependence on over 4000 lines of legacy code, and, in collaboration with others, produced a more robust, flexible Digital Delivery API and implementation. Received Java Readability certification within one month of arrival.

Youth Minister, St Barnabas Episcopal Church, Glen Ellyn IL 2003-2004
Led the senior high youth group and co-led the junior high youth group, focusing especially on Bible study, including a study of Esther and of the Psalter. Organized a work trip to Bristol, TN in July 2004.

Software Engineering Intern, Trax Technologies, Scottsdale AZ **summer 2000**
Collaborated in the development of internal libraries aimed at highly efficient data storage and retrieval, using Visual Basic 6, for freight billing applications. There was a strong emphasis on doing excellent object-oriented programming and understanding the machine code generated by Visual Basic.

Macintosh Consultant, Wheaton College, Wheaton IL **1996-1998**
Served as Macintosh consultant for internal purchasing decisions and for the other technical support staff. Developed web pages for application distribution, problem reporting, and online tech support. Developed a tool for UNIX system administrative tasks in Perl. Tutored and supported end users on Macintosh and Windows 95.

COMPUTER SKILLS

Programming languages - Java, Visual Basic, Visual Basic .NET, Objective C, C/C++
Frameworks - Cocoa, .NET, WebObjects
Scripting and Database - Perl, MySQL
Operating Systems - Mac OS X (extensive, including its BSD layer), Windows
Applications - XCode, Visual Studio, Photoshop

TESTS, CONTESTS, AND AWARDS

Baylor Programming Contest
First place in semi-annual programming contest Fall 2006

Apple Student Scholarship
To attend its World-Wide Developer's Conference 1999, 2000, 2001, 2002, 2006, and 2007

GRE
1550 combined score (800 Mathematics, 750 Verbal) 2004

Jameson Essay Contest (Wheaton College)
2nd Place, "Moral Living in the New Testament and in Aristotle's Nicomachean Ethics" 2000

Putnam Exam in Mathematics
19 (90th percentile) 2000

LINGUISTIC SKILLS

I am proficient in Dutch—my mother is a native speaker, and my parents spoke only Dutch to me for several years after I was born. My comprehension of spoken and written Dutch is very good, although my ability to express myself is more limited. (I also have studied some German and Spanish.)

OTHER INTERESTS

I also enjoy: live theater (watching, acting, and directing), fine tea, fiction (reading and writing), cycling, and yoga.