Sample Personal Statement

University of California Academic Personnel Review

Date

[   ]

Assistant Professor

[   ] Department

I have been a computer scientist in one form or another since the fourth grade. That isn't so rare now, but I attended one of the first three elementary schools in the country to have computers available for students to use [   ]. I spent many of my recesses learning to program by examining Basic programs. In many ways being a computer science professor is my dream job, combining my love of computer science research with my passion for teaching, and I look forward to a long and successful career at UC Santa Cruz.

My biobib lists many of my professional accomplishments, including those since arriving here last Fall, but it fails to capture the full range of things I have done and leaves out many other aspects of my life here that I believe need to be considered in any evaluation of my accomplishments. Accordingly, I would like to outline some of my other accomplishments and discuss some of the things in my life that are not included in my biobib.

I am currently working on three systems research projects. I am doing ongoing and new research related to my Ph.D. dissertation topic, soft real-time systems. In addition to my ongoing work in this area, I have recently entered into collaboration with [   ] of [   ] and we have already written one proposal to the Office of Naval Research Multi-University Research Initiative. We have also outlined two papers that we plan to write on our mutual research. Since arriving here I have started doing research in advanced storage systems, including probe storage research in collaboration with Dr.[   ] and Dr.[   ]. Finally, I have recently begun doing research on Video-on-Demand with [   ] and [   ] of the [   ]. I expect all of these research projects to be very successful in terms of research results, papers produced, proposals written and funded, students supported, and advanced degrees granted.

During the past year I have had one journal paper appear and another was accepted for publication. These were both in special issues of very highly respected journals with low acceptance rates (11% and 19%). In addition, I am currently working on several conference-level papers about various aspects of my soft-time research. One paper, tentatively entitled, "Performance Metrics for Soft Real-Time Systems," discusses performance characterization of soft-real time systems. It includes work that I have done on my own in this area, as well as collaborative work with [   ] of the [   ]. This paper

will be ready for publication in the next few months. Another paper, tentatively entitled, "Dynamic Constrained Rate-Based Scheduling," discusses some new ideas I have in the area of Rate-Based Scheduling (RBS). RBS is good for a limited class of applications, such as real-time audio with hardware buffering, but doesn't support other types of computing very well. I have recently developed some ideas about ways to extend this scheduling model to include hard real-time computing, adaptive soft real-time computing, and best-effort computing. I expect this research to bear fruit over the next year and lead to several publications and one or more research proposals.

During the past year I wrote a number of proposals on various aspects of my different research projects. One, "Architectures and Algorithms to Exploit Probe-Based Storage," written with [   ] and [   ] was funded by the National Science Foundation (NSF) at a level of $345,191 over three years. I am especially excited about this grant as it represents an expansion into a new area of research for me. In addition to this successful proposal, I wrote three other proposals this year. The first was written in collaboration with [   ] at the [   ] and discussed the application of my soft real-time scheduling and middleware ideas to next generation handheld computers. It was also sent to NSF and was deemed to be good but was declined for funding. The second proposal was sent to the Office of Naval Research (ONR) Young Investigator program. This is an extremely competitive program in which only a handful of awards are made each year. This proposal covered extensions to my soft real-time work. It focused on improving the soft real-time system I have developed, further examining resource allocation algorithms, and developing additional soft real-time performance metrics. I intend to resubmit both of these proposals to NSF in the coming year. The second proposal was, in my opinion, the better of the two but was not of interest to the ONR. I also recently submitted an ONR Multi-University Research Initiative, proposal on Quality of Service resource management with [   ] and [   ] at the [   ]. We haven't yet heard whether or not this proposal will be funded.

In the coming year I plan to write proposals covering my new Rate-Based Scheduling research, mentioned above, and other aspects of my soft real-time work including one or more joint proposals with [   ] at the [   ]. I have also had discussions with [   ] and [   ] about additional proposals in the area of file and storage systems. We have identified several funding opportunities and are currently in the process of deciding which ideas to write up for which opportunity. I have also had several discussions with [   ] of the [   ], whom I met at [   ] in July and with whom I spent a productive day and a half recently here in Santa Cruz. His research is very closely related to mine and he has expressed a strong interest in my soft real-time algorithm and metric work. I am similarly interested in his work. He brought to my attention a funding opportunity for joint research funding for new collaborations between Europe and American computer science researchers. We are consequently planning to write a joint proposal along with [   ] of [   ]. The proposed research will involve soft real-time theory and system development. We plan to start working on this proposal in the next few months.

Prior to coming to the University of California, while pursuing my Ph.D. in the Computer Science Department of the [   ], I was invited to teach Introduction to Computing. It is

rare for students to teach courses in the department and I was honored to have been asked to do so. I expected to be an adequate but uninspired teacher. To my surprise I discovered that I love teaching. Further, I discovered that the students really like me as a teacher. I was subsequently invited to teach the course three more times before completing my Ph.D. and leaving the University. In the process I taught a class as small as 40 students and as large as 275 students, supervising 1 to 5 teaching assistants. In my four semesters of teaching this class I received student assigned grades of A-, B+, B, and C+ (for the 275 person class). These grades are at or above the average for the faculty in that department, especially for a freshman course. Teaching those classes was a fun, interesting, and extremely valuable experience for me, and one that solidified my desire to become a professor.

Since arriving at the University of California at Santa Cruz, my teaching experiences have been similarly positive. I proposed a new graduate-level course, CMPS 290S, Advanced Topics in Computing Systems. In Winter quarter last year I taught it for the first time as a seminar course covering real-time and soft real-time computing. While the attendance was limited (three registered students, two students auditing the course, and one semi-regularly attending faculty member), the experience was extremely positive. I found that working with a small group of students in a seminar setting can be extremely rewarding. Two of the three registered students have expressed an interest in working with me further in this area. In Spring quarter last year, I taught CMPS 111, Introduction to Operating Systems. This class had about 75 students and was an excellent experience. I truly enjoyed teaching this interesting and exciting material to a group of students without previous experience in this area. The students generally rose to the challenge of this difficult material and responded very well to my instruction. In both of my courses here at UC Santa Cruz I have received marks from the students ranging from very good to excellent. Furthermore, I have developed an even deeper love for teaching. I very much look forward to teaching these and other courses in the future.

One of the great rewards and responsibilities of working in a research environment such as this is participation in the running of the organization. Along those lines I have volunteered for and participated in a number of committees looking to fill five positions in the School of Engineering, attending all of the job talks in our department, as well as several in CE and EE. I was also on a number of Master's committees and attended all but one of the Ph.D. defenses in the systems area.

During the past year I have been involved in a number of outside professional activities. IN addition to reviewing papers for several conferences, I have been involved in the organization and execution of three conferences. I am the Work-in-Progress chair for the 2000 IEEE Real-Time Systems Symposium. This is the top real-time systems conference and in addition to the normal program committee duties I have been responsible for soliciting, reviewing, selecting, and publishing the Work-in-Progress papers for this conference. I have also been serving as the Program Chair for the Americas for the Joint International Workshop on Distributed Real-Time Systems and International Workshop on Embedded/Parallel HPC Systems. Finally, I am a member of the organizing

committee for the Symposium on File and Storage Systems, which is to be the premier venue for publishing research in the file and storage system research area.

During the past year I have had the opportunity to work individually with a number of students. In addition to the teaching and thesis committee memberships in my biobib, I have had numerous opportunities to interact with the students in our department. I employed three undergraduates to work on two of my research projects. All three did some very good work but have more recently become busy with course work and summer jobs. One of these students, [   ], will be entering the Master's program this Winter and I have agreed to be his advisor. I also have two Ph.D. students who started in the program this Fall. [   ] will be working with me on my soft real-time research and [   ] will be working with me and [   ] on soft real-time and Video on Demand. Both of these students are highly motivated and I expect them to do well. I look forward to working with them both. I have also started working with two of [   ] students, [   ] and [   ]. Both of these students are working on storage research and [   ] will eventually be working on the research funded by our NSF award (mentioned above). I look forward to working with both of them further as my interaction with the storage research grows. I have also had research discussion with two other students who I believe may end up working with me.

I am very grateful to have been given the opportunity to come to the University of California at Santa Cruz and be a member of the Computer Science Department. The existing faculty members have been extremely good colleagues and I look forward to a long and successful career here.

Publications

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In accordance with the Academic Personnel Action Instructions, this is a description of my contributions to all papers published since my appointment at UC Santa Cruz.

Journal Publications

- [   ], "Flexible Soft Real-Time Processing in Middleware," Real-Time Systems Journal, Special Issue on Flexible Scheduling in Real-Time Systems, to appear.

  I did all of the work described in this paper and was the sole author of this paper. I included [   ], my advisor, because the bulk of the paper is taken from my dissertation, which I did while working with him.

- [   ], "Dynamically Negotiated Resource Management for Data Intensive Application Suites," IEEE Transactions on Knowledge and Data Engineering, 12(1): 78-95, January/February 2000. [2/18 11% acceptance rate]

  This paper discusses research work done by several members of my research group at the [   ]. It includes a high-level description of my research as well as that of two other students. I was one of the two principal authors of this paper. The other principal author was my advisor, [   ].

Proposals

- "Coordinated Management of Resource Allocations and Application QoS Level Adaptations for Mixed (Hard-, Firm-, and Soft-) Real-Time Systems," DARPA Multi-university Research Initiative [   ], $630,000.

  This proposal covers new work in the area of research allocation, Quality of Service and real-time systems. I wrote approximately 1/3 of the proposal.

- "Architectures and Algorithms to Exploit Probe-Based Storage," [   ], National Science Foundation, $589,890.

This proposal covers new work in the area of file systems and architectures for probe based storage. The original idea was proposed by [   ] and additional work was done by [   ] and myself. I did approximately 1/3 of the work for this proposal.

- "Dynamic QoS Level Resource Management for Soft Real-Time Processing and End-to-End Quality of Service," Office of Naval Research Young Investigator Program, $300,000.

This proposal covers new work in the area of soft real-time systems. I did all of the work for this proposal.

- "Collaborative Research: Application Sensitive Management for Small, Communicating Computers," [   ], National Foundation, $221,840

This proposal covers new work in the area of application sensitive resource management for small communicating computers. I did approximately ½ of the work for this proposal.