

Computer Science Colloquium

Twentieth Series - Spring 2004

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Thursdays noon to 12:50 in Darwin 108 on the SSU Campus
Open to the Public

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| February 12 | <p>PROBLEMS WITH HEALTH CARE TECHNOLOGY</p> <p>Michael Skolnik EDS, Petaluma</p> <p>Can health care ever become truly automated to support quality and flawless health care delivery? Health care has remained at least ten to fifteen years behind other vertical markets in implementing technology solutions to their major clinical and management issues. Why has this been the case? Why do 60% of technology projects fail in healthcare? How can technology become a catalyst leading to a new and better health care system? Is the embedded bureaucracy going to change its operating protocol to allow technology to work its miracles in the health industry? These and other issues regarding technology and the delivery of health care in the US will be discussed.</p> |
| February 19 | <p>THE HARD CHALLENGE OF MAKING EASY SOFTWAREE</p> <p>Michael Slater Adobe, Santa Rosa</p> <p>Creating an application to enable ordinary consumers to enjoy digital photography turns out to be quite a challenging problem. The solution Adobe has developed, Photoshop Album, required some new paradigms and a lot of difficult design choices. The development process and experience with users provides a variety of lessons about the challenges of designing easy-to-use software and the hidden complexities that make what seem like simple problems sometimes very hard to solve simply.</p> |
| February 26 | <p>GAME PROGRAMMER: ENGINEER OR ARTIST?</p> <p>Tim Innes & Jason Morales S2 Games</p> |

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| | <p>Even before computers, people dreamed of alternate worlds. While films like The Matrix are still purely fictional speculation, we're hard at work trying to improve the believability of our simulations. While engineers created the first games alone, over time art assets have become the largest portion of development. However, as the laws and theories of physics, chemistry and even biology become ever more important factors in the presentation of games, it seems that engineers are once again becoming the artists.</p> |
| March 4 | <p>DOT-COM WAR STORIES: HOW (AND HOW NOT TO) RUN A WEB STUDIO</p> <p>Liz Warner MadFish, San Francisco</p> <p>Liz Warner co-owned and managed a web studio during the dot-com boom and bust. Her presentation will include: Tips on self-employment for techies. How to thrive (or at least survive) in any economy. Client management for programmers. Hiring & firing contractors, and choosing partners. The smartest and stupidest things I did as a consultant, and why they're often the same.</p> |
| March 11 | <p>WHY ZOMBIES ARE IMPOSSIBLE</p> <p>Teed Rockwell Sonoma State University Philosophy Department</p> <p>Many Philosophers claim that there is no contradiction in the idea of a Philosopher's Zombie, i. e., a being which is physically identical to a conscious human, but which is not actually conscious. This claim rests on the widely held assumption that we have a direct awareness of our subjective, private experiences. But this assumption is false, because the idea of direct awareness is incoherent. Because there is no direct awareness of subjective experiences, Philosopher's Zombies are revealed to be as self-contradictory as Zagnets (i.e. objects which behave like magnets, but which have no inner "magnetizmo".) Does this mean that philosophers cannot be spoofed?</p> |
| March 18 | <p>IT PERSPECTIVE ON SYSTEMS ANALYSIS IN A CRM IMPLEMENTATION</p> <p>Dawn Jenner DataFlow Computer Resource Management, Santa Rosa</p> <p>Customer Relationship Management (CRM) is fast becoming the preferred way businesses interact with their clients and customers. Yet, statistics show that most CRM ventures fail, costing millions in lost revenue. Key to effective CRM implementation is a systems analysis process that clearly focuses on the company's goals and client needs, while identifying the company's culture and resources, and accurately matching the appropriate technology with the users' abilities.</p> |

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| <p>March 25</p> | <p>MULTIFINGERED GRASPING: FROM GRASP REFLEXES TO CONTEXT-DEPENDENT STRATEGIES</p> <p>Jefferson Coelho Sonoma State University Computer and Engineering Science Graduate Program, & Agilent, Santa Rosas</p> <p>Grasping plays an important role in human cognitive development, helping infants develop primitive problem solving strategies and aiding the onset of perceptual categorization. Grasp controllers can be suitable for implementation on robotic devices. Grasp controllers are initially defined as simple grasp primitives, the first step in the bootstrap procedure leading to context-dependent strategies. Physical objects can be autonomously defined by the robot, based on the history of grasp interactions. The resulting grasp controller is being implemented in Nasa's robonaut, a robotic helper for astronauts.</p> |
| <p>April 1</p> | <p>SCALABLE MANAGEMENT OF COMPUTER SECURITY (ANTI-WORM, ANTI-VIRUS, IDS, FW)</p> <p>Patrick Lincoln SRI International, Menlo Park</p> <p>The antivirus/antiworm talk is based on a paper and presentation at WORM 2003, CCS, and a paper Dr. Lincoln and his coworkers at SRI are currently writing for Usenix Security, as well as general pontification on his part about these issues.</p> |
| <p>April 8</p> | <p>SPRING RECESS - NO COLLOQUIUM</p> |
| <p>April 15</p> | <p>WHO MAKES THE BEST PARTNER? NEURAL NETWORKS WITH PERSONALITIES</p> <p>Gerald Eisman San Francisco State University Computer Science Department</p> <p>Since J.J. Hopfield invented the "energy" function for recurrent neural networks in the early '80s, these systems have been used to find approximate solutions to combinatorial problems such as the Task Assignment problem or the Traveling Salesman problem. Improved results can be obtained by partnering two networks to work on a problem together. The individuals seek their own energy minima but periodically communicate their partial results to one another and then adjust their search accordingly. By giving the networks "personalities" (e.g. stubborn networks refuse to change course, forgetful networks frequently reset and begin again), we find that certain pairs perform better than others.</p> |

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| April 22 | <p>IMPROVING MPI FOR LINUX CLUSTERS</p> <p>Greg Benson University of San Francisco Computer Science Department</p> <p>The Message Passing Interface (MPI) has become a dominant programming paradigm for scientific and numerical parallel computing. In addition, Linux clusters base on switched networks allow for rapid and low-cost deployment parallel computing systems. This talk will summarize our recent efforts to improve MPI for Linux clusters. In particular, our own implementation of MPI, called USFMPI, performs better than both MPICH and LAM-MPI in many cases. Unlike MPICH and LAM-MPI, the USFMPI implementation is relatively compact making it easy to explore alternative implementation techniques. Experiments with the dissemination algorithm for allgather collective communication will be described.</p> |
| April 29 | <p>THE IMPACT OF VoIP ON THE RESTRUCTURING OF THE US TELECOM INDUSTRY AND REGULATION</p> <p>Don Proctor, Cisco, San Jose</p> <p>As the Telecom Act of 1996 redefined the role of the service provider in the late 1990s, VoIP began to redefine the fundamental business model of the US telecom market. In the old model, service providers charged for services based on time and distance; in the new model, service providers charge for services based on bandwidth and features. Today, 10% of business voice traffic is transmitted as VoIP, and cable operators, incumbent carriers, and competitive carriers are offering VoIP services to an increasing number of businesses and consumers. Initially deployed as a less expensive way of transmitting voice traffic, today VoIP has become one element in a portfolio of multi-modal broadband services including email, Web surfing, and instant messaging. As the concept of the traditional "telephone call" continues to evolve, the concept of universal access the regulatory framework that supports it must also evolve.</p> |
| May 6 | <p>INSIDE GAME DEVELOPMENT</p> <p>Jason Shankel Maxis, Walnut Creek</p> <p>The computer game industry combines elements of both entertainment and technology. Do these elements mesh? Do they clash? How does a computer game develop from the initial design stage to its final release?</p> |
| May 13 | <p>TO BE ANNOUNCED</p> <p>Caroline Gan Motorola (Next Level Communications), Rohnert Park</p> |

To be provided