

Computer Science Colloquium

Seventeenth Series - Fall 2002

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

Sept 12	<p>The Software Development Cycle As It Applies To A Marketing Database</p> <p>Eric Levinson Broderbund, Novato</p> <p>It can be potentially difficult to please all those involved in the software development cycle. Marketing managers will design a feature spec and MRD (Marketing Requirements Document) and pass those on to the project manager. The project manager and engineering staff will then discuss the scope of the MRD and assign a very vague timeline to the various aspects of the project. In addition, the engineers will begin the Design Document, assumptions, test plans (both end to end and unit), as well as a project plan document describing everyone's role in the project. This talk will focus on the project as it makes its way from a dream to a reality.</p>
Sept 19	<p>Five Decades In Molecular Graphics: From Pen-And-Ink To Star Trek II And Beyond</p> <p>Robert Langridge University of California, San Francisco</p> <p>When Watson and Crick proposed their model for DNA in 1953 their computer was a slide rule and the three dimensional visualization tools were wire models. As a graduate student working on DNA in Wilkins lab in 1954 my tools were still wire models, mathematical tables, a slide rule and a desk calculator. The illustrations for publications were pen-and-ink drawings. In late 1956 I programmed the first application of a digital computer to DNA, using the IBM 650, but the visualization tools were unchanged. The application of interactive three dimensional computer graphics to molecular biology began in late 1964, with the use of the DARPA-funded three-dimensional display system at Project MAC, MIT, by Levinthal at MIT and myself at Harvard. In the following years computer graphics became an integral part of research on DNA and protein structure and in the design of therapeutic drugs. As a by-product, numerous TV programs and even one major motion picture made use of the graphics prepared at my NIH-funded Computer Graphics</p>

	Laboratory, first at Princeton and later at UCSF.
Sept 26	<p>OO Design In Practice</p> <p>Allen Holub Berkeley</p> <p>Object-oriented design promises many things: faster development time, easier maintenance, programs that actually solve real users' problems. Though many companies like the idea of OO, few of them are able to implement these ideas effectively. We'll start this talk with a quick discussion of the OO process, from requirements gathering through to coding. We'll then discuss the special needs of an OO shop, and the impediments to implementing this process effectively in the workplace.</p>
Oct 3	<p>Neural Networks For Dummies And In Everyday Life</p> <p>Anne Menendez Silicon Recognition, Petaluma</p> <p>Neural networks are known for their ability to solve fuzzy and ill-defined problems that are too complex for conventional technologies. Understanding neural networks is also known to require experience in mathematical modeling and computer programming, not to mention the need for powerful computer systems. They have been used in R&D and governmental laboratories for years but are slowly emerging in applications such as financial risk assessment, robotics, machine vision, predictive maintenance and more. A new neural network silicon chip called ZISC (Zero Instruction Set Computing) has the capability to turn this once privileged technology into an applied, easy-to-use and affordable technology. The chip implements the known RBF (Radial Basis Function) and KNN (K-Nearest Neighbor) neuronal models, but its key feature is a parallel architecture which delivers ultra high-speed performance and unlimited expandability. In consequence, applications of the ZISC can be seen in workstations (i.e. brainputer) for massive real-time data mining where one pattern has to be matched among millions in a few milliseconds, as well as in appliances and sensors where intelligence (i.e. pattern recognition or non-recognition) can be distributed locally for direct decision making or for the selective transmission of the information of interest.</p>
Oct 10	<p>Digital Video Present And Future</p> <p>Thomas "Rick" Tewell Ligos Corporation</p> <p>This will be a presentation concerning the current state of the art of video technologies, Microsoft's new, bold, and a bit disturbing vision of the future of video and the Internet's role in the transmission of video images, clips and full movies. Included in the presentation will be a discussion of "home gateway" technologies as currently being fostered by some key customers.</p>

Oct 17	<p>Cheap PCs As Network Appliances</p> <p>Tim Kientzle Oakland</p> <p>By combining free software, such as Linux, FreeBSD, Samba, MySQL, or Apache, with low-end mass-market PCs, it's possible to build very capable servers for under \$500. What's more, by packaging the software as a bootable CD-ROM, you can create a "virtual network appliance" which requires no software installation and essentially no configuration. I'll discuss some projects that are already doing this, and explain how to design and build your own such systems.</p>
Oct 24	<p>Inside Computer Game Development</p> <p>Jason Shankel Maxis Corp., Walnut Creek</p> <p>Computer game development is a challenging and rewarding field, combining elements of art, entertainment and technology. In this talk, I will describe the elements of the computer game development process, including how computer game development teams are organized and how games evolve from concept to design to implementation.</p>
Oct 31	<p>Five Things Harvard Doesn't Teach You About Computer Science</p> <p>Michael E. Duffy Sebastopol</p> <p>Mike Duffy graduated from Harvard before you could major in CS. Back then, if you were interested in computers, you were either an Engineering or a Applied Math major. Engineering didn't require an undergraduate thesis, so... Since then, Mike has learned a few things that were never covered in class, including: How to choose your first CS job, Business and Engineering, The Things You REALLY Need to Know, Dead End Topics in Computer Science, and Recognizing the Next Big Thing. You can read about protocols, algorithms, and HTML in a book. Mike brings a real-world perspective and 25 years of experience to bear on the subjects of Computer Science and Software Development in his talk. Please join him for 45 useful and informative minutes! You can read more about Mike at www.mikeduffy.com/myBio.html.</p>
Nov 7	<p>Apple's OS X - Where User-Friendly Meets Geek Lust</p> <p>David Sims</p> <p>For the first time in memory, the choice computer -- from a hardware and software perspective -- for alpha geeks is the very same as the choice computer you would suggest for a non-technical friend. Apple has changed the rules by laying its consumer friendly interface and popular applications on top of a Unix-based shell in its OS X (operating system number 10) machines. In addition to all this power under the hood -- which most</p>

	<p>users will never tap -- Apple is out in front building in wireless technologies (first Wi-Fi, now Bluetooth) and offering smart applications that make it much easier to work with media (iMovie, iPhoto, iTunes). I'll give an overview of what's in OS X, look at Apple's market position, and demonstrate some of the iApps that users say make the machines worth the money.</p>
Nov 14	<p>Spam, Web Bugs And Viruses, Oh My!</p> <p>Lou Katz Metron, Alameda</p> <p>The SMTP protocol for E-mail and the HTTP protocol for web browsing were developed in a kindlier, gentler Internet, when greedy, hostile and malicious activity had not yet appeared. I will focus on the technical aspects of these protocols and how they relate to the social problem of unwanted E-mail, spyware and unauthorized manipulation of ones private computer resources.</p>
Nov 21	<p>Informal Tools For Designing Anywhere, Anytime, Anydevice User Interfaces</p> <p>James A. Landay UC Berkeley</p> <p>We are now entering the era of pervasive computing, an era where people will access information and services anywhere, anytime, and from a wide variety of devices. The challenge for researchers and practitioners is how to support the design of user interfaces that will empower people to engage in these interactions easily and efficiently. Our work has been in creating design tools that support the best practices of user-centered design. Such practices include the informal techniques used during the early stages of design, such as sketching and "faking" interactions using Wizard of Oz techniques to test early designs. In this talk we will argue that tools with informal user interfaces best support these practices. Informal user interfaces support natural human input, such as speech and writing, while minimizing recognition and transformation of the input. These interfaces that document, rather than transform, better support a designer's flow state. Unrecognized input embraces nuanced expression and suggests a malleability of form that is critical for activities such as early-stage design. We will illustrate this by examining informal tools we have created for designing information architectures and web sites, speech-based user interfaces, and anytime, anywhere user interfaces that take advantage of a variety of modes of input and output on a range of devices.</p>
Nov 28	<p>No Colloquium -- Thanksgiving</p>
Dec 5	<p>Computer Forensics: Collecting Evidence From A Digital Crime Scene</p> <p>Todd Hancock Northern California Computer Crimes Task Force, Napa County Sheriff's</p>

Department

A computer forensic examiner approaches his "crime scene" in much the same way that a criminalist examines the scene of a homicide; by applying clear, well defined methodologies and procedures. Computers and digital media are increasingly involved in unlawful activities. The computer may be contraband, fruits of the crime, a tool of the offense, or a storage container holding evidence of the offense. Images, audio, text and other data on these media are easily altered or destroyed. The "art" of Computer Forensics involves the preservation, identification, extraction, interpretation and documentation of computer data. Computers and related evidence range from the mainframe computer to the pocket-sized personal data assistant to the floppy diskette, CD or other smaller storage media.

Dec
12

Backup and Recovery, as Part of Disaster Recovery

Lynnwood Brown

Disaster recovery and business Continuity is more than just marketing spin. It's that your doors are open 24x7. It's the support to make sure that your customers are serviced to the standards they expect. It's about protecting your revenue. It's your investment. Creating a business continuity plan is far from a trivial exercise. How do you ensure that your disaster recovery plan meets your needs? Equally fundamentally, do you know what your resource/service dependencies are and what their time criticalities are? Risk analysis is inextricably linked with disaster recovery. Assessment of the risks which may lead to disaster is essential in the determination of what controls are appropriate to the situation. The presentation will address the backup and recovery aspects of disaster recovery focusing on some of the current solutions for implementing a backup and recovery solution for restoring IT services.