

HOT RESEARCH

Software Design Sketching

It all started with a vision, inspired by a video on YouTube of a physics professor drawing on an electronic whiteboard and being able to instantly simulate the behavior of a car barreling down a hill, jumping off, and hitting and setting in motion a variety of obstacles. What if, Professor **André van der Hoek** and his

graduate student **Alex Baker** pondered, software engineering diagrams could behave in much the same way? What if one could quickly sketch a software architecture, and then ask the diagram to

tell us how it “felt,” for instance by moving incompatible interfaces further apart, coloring servers red if their expected load is too high, or blinking those components that it deems insecure? On board came **Nicolas Mangano**, an undergraduate student at the time, to explore this question.

It is now five years later and Alex Baker graduated with his Ph.D. in 2010, Nicolas Mangano is close to finishing his Ph.D., and a large group of M.S. students, undergraduates, and visitors have contributed to the project.

What happened is an intriguing tale of academic research, corporate partnership, a close look at how software designers actually work, a novel software design sketching tool, and technology transition into the classroom and industry.

Van der Hoek and Baker realized early on that they needed to develop a deep understanding of how software designers actually work at the whiteboard. How do

RESEARCH BRIEFS

Prof. **Cristina Videira Lopes** has been awarded \$500,000 by the National Science Foundation (NSF) for her research on Automatic Software Architecture Recovery: A Machine Learning Approach.

Prof. **Gloria Mark**, ISR, and Prof. Mark Warschauer, School of Education, have been awarded \$500,000 by the National Science Foundation (NSF) for their research on Multitasking as a Collaborative System: Examining the Millennial Generation.

Prof. **Walt Scacchi** has been awarded \$133,163 by the National Science Foundation (NSF) for his research on EAGER: Creating a Framework for Prototyping Science Missions and \$106,754 by the US Navy for his research on Streamlining the Process of Acquiring Secure Open Architecture Software Systems.

Prof. **Bonnie Nardi** co-authored the book *Activity Theory in HCI: Fundamentals and Reflections* with Victor Kaptelinin. Published by Morgan & Claypool Publishers, the book is part of the Synthesis Lectures on Human-Centered Informatics series.

Prof. **Paul Dourish** gave the opening keynote talk, entitled “The Materialities of Information: Databases and Representational Practice,” in October at NordiCHI 2012 – the main Nordic forum for human-computer interaction research.

Prof. **David Redmiles** gave the opening keynote address, entitled “Awareness, Trust, and Tool Support in Distance Collaborations,” at the Brazilian Symposium on Collaborative Systems (SBSC 2012) in October in São Paulo, Brazil. Redmiles also participated in the SBSC writing workshop as a mentor.

More Research Briefs on pages 5-6.

they navigate a design problem? What kinds of diagrams do they draw? How do they coordinate their mutual ideas? What do they do when they get stuck? What kinds of conversations take place?

To answer these questions, they approached professional, highly experienced software designers and architects and asked if they could videotape them while at work. “The response was amazing,” says van der Hoek. “We received positive responses

all around, including from designers of some of the most well-known software products to date.” The resulting video catalogue formed the basis not only for Alex Baker’s eventual dissertation, but also for an NSF-sponsored workshop that took place at UC Irvine in 2010 (<http://www.ics.uci.edu/design-workshop>). Baker took the idea of video analysis even further, compiling additional videos so as to compare the design approaches of the experienced professionals with those of novice designers.

The results are intriguing. Experienced designers exhibited a pattern of rotating between pairs of topics in their discussions. Unplanned, and indeed even unwittingly, they would spend short blocks of time, with the discussions in each block juxtaposing two of a small handful of topics of importance to the design problem. The two topics would rotate from block to block, seemingly enabling the designers to push the design forward

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Researchers sketching interfaces with Calico on tablet PCs and laptops.

from all different angles. Novices on the other hand, worked on a single topic at a time, often for extended, drawn-out discussions. Van der Hoek notes: "These differences have serious implications for how we train software engineers and what tools we provide to them. A focus on design behaviors, rather than design notations, is necessary. Especially at the whiteboard, where rough design sketches are prevalent, we need to learn, document, and share the practices of those who successfully work through design problems."

In the meantime, van der Hoek and Mangano began to develop an experimental software design sketch environment, called Calico. Leveraging two gifts, one of three electronic whiteboards by Hitachi and one of 20 tablet PCs by Hewlett Packard, they began to experiment with the design of an interface that would retain the fluidity of "just drawing and writing on the whiteboard" while at the same time enhancing the sketch experience with powerful functionality to not just manipulate the designs at hand, but to also amplify the design behaviors that professionals exhibit.

Funded by two grants from the National Science Foundation, as well as a gift from Microsoft, van der Hoek and Mangano undertook this work with the help of professional

designers from a range of local corporations. These designers would periodically visit, try the software, and provide feedback, which was used to iteratively refine Calico over the years. "The involvement of day-to-day

software design professionals has been instrumental in how we evolved Calico from an early sketch tool to now a full-featured software sketch environment that supports distributed, collaborative design meetings."

With the help of various M.S. and undergraduate students, Calico has rapidly matured this past year, to the point where it is now regularly used by van der Hoek in two of the courses that he teaches (Software Design, Introduction to Software Engineering) and is also being transitioned into actual use in industry. In October, van der Hoek, Mangano, and **Michele Bonazza** (a visiting student from Italy who is working on an Android

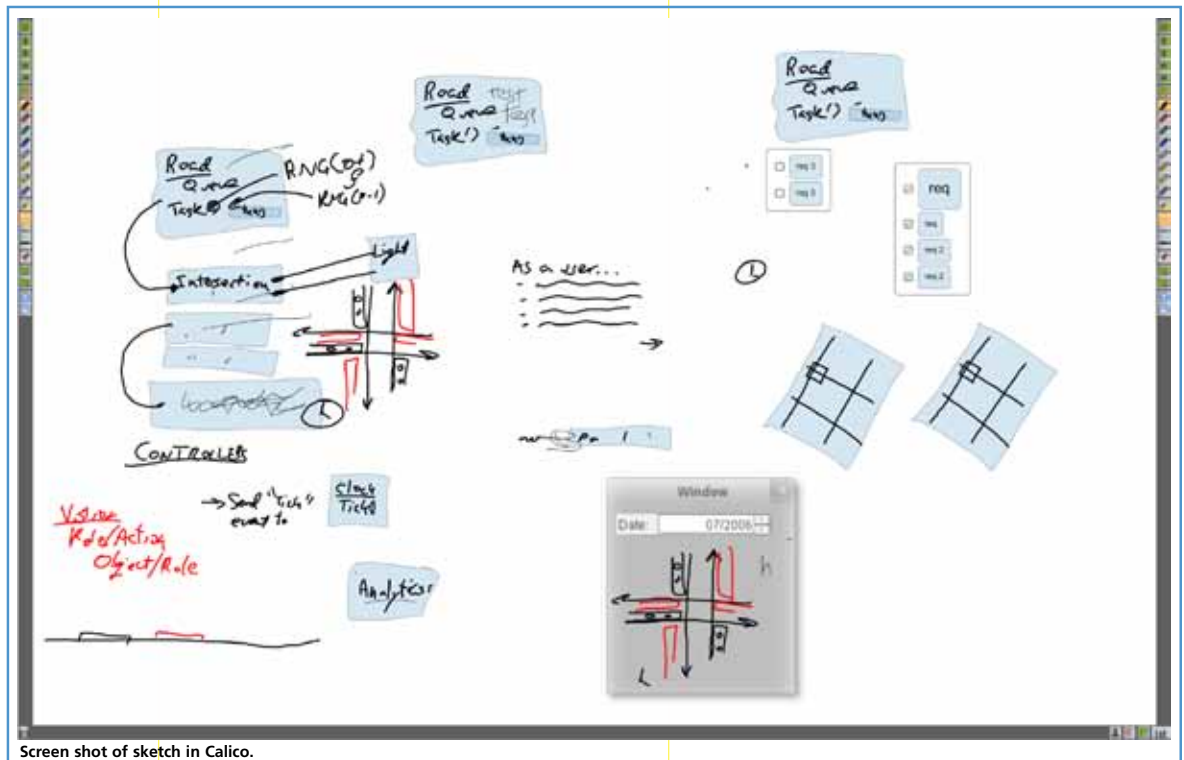
version of Calico) flew up to the Bay Area to install Calico at Cooper, a user experience design and strategy firm.

As for the initial vision... five years later, none of the diagrams sketched using Calico can yet tell the designer how they "feel." All of the research, however, has led to a much deeper understanding of the behaviors of software designers, a real system in real use, and Calico's own YouTube video, as well as a platform upon which van der Hoek and his research group are now exploring various exciting extensions. One such extension is to map sketched elements onto a formal notation. With this mapping, it becomes possible to analyze the diagrams and provide feedback to the designers. Indeed, this feedback is provided through diagrammatic elements that color themselves based upon whether they are expected to execute within specified performance limits. Perhaps that original vision wasn't so crazy, after all.

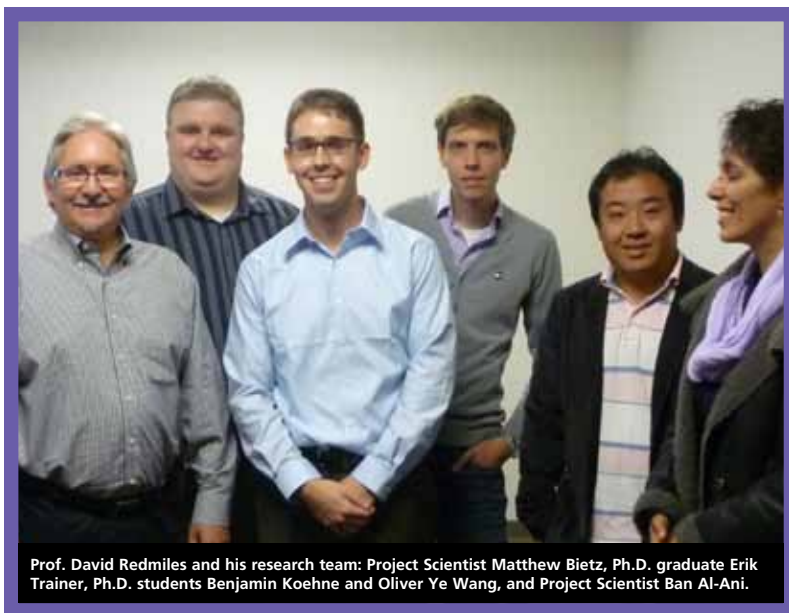
For more information about this and other research by van der Hoek's group, visit their web site at: <http://sdcl.ics.uci.edu>.

The Calico video is available at: <http://www.youtube.com/watch?v=qmguACcFjSg>.

Prof. van der Hoek can be reached at andre@ics.uci.edu.



Screen shot of sketch in Calico.



The data Redmiles' team gleaned from these interviews is rich. Besides the examples about trust across different cultures, they learned about the roles of what one might call personal and professional trust or, more technically, affective and cognitive trust.

Affective trust

refers to feelings and beliefs people have toward one another, beliefs that in turn affect how they set expectations for others' behavior. Cognitive trust also involves expectations for behavior but is based on beliefs about technical behaviors such as observed performance or knowledge about expertise. Both play an important role in creating trust during collaborations.

In fact as the notions of affective and cognitive trust emerged in their interviews, Redmiles' group began to study them specifically. They set up an experiment to see which might have more effect on collaborations. They gave participants in the experiment multiple brainstorming tasks. Participants were told they were working with two other participants they never saw. The set-up mimicked situations where collaborators are put together for a project, but have never met and must develop trust swiftly to proceed. For some of the tasks, participants saw information about the collaborators' expertise, such as previous work experience, setting up expectations for cognitive trust. For other tasks, they saw information about the collaborators' personal traits including hobbies and various likes and dislikes. As it turned out, there was no difference in the trust level between knowing cognitive and affective information.

The observations Redmiles' team are making from the interviews and the results they have gotten in more classic laboratory experiments, such as the brainstorming tasks, motivate their thinking about devel-

Researching Trust in Globally Distributed Development Teams

For the past few years, Prof. **David Redmiles'** research group has been studying the topic of trust in globally distributed teams. The definition of trust they rely upon most is that trust, among collaborators, is the meeting of expectations. In the context of software development, examples of collaborators meeting expectations may include simple behaviors such checking in modules on time or responding to emails within 24 hours. Expectations can be more complex such as whether an individual or group tends to overcommit or to what degree collaborators are passive or assertive in problem solving discussions. There can even be different expectations about body language, such as when it is appropriate to smile or not.

Redmiles' group came upon the examples above and the idea of trust as meeting expectations through interviews they conducted in five Fortune 500 companies. They interviewed over 60 subjects over a three-year period. Those interviewed had various positions such as software developers, engineers, managers, and lawyers. There were both female and male participants in the interviews. The interview protocol was designed so as to approach the topic of trust indirectly, using open-ended questions, and allowing the participants to put forward examples.

ISR STUDENT NEWSBRIEFS

Gerald Bortis's (A. van der Hoek, advisor) paper "PorchLight: A Tag-based Approach to Bug Triaging" has been accepted to the 35th Int'l Conference on Software Engineering (ICSE 2013) to be held in San Francisco, CA in May. The paper is co-authored by his advisor, Prof. **André van der Hoek**.



Alegria Baquero (R. Taylor, advisor) presented her paper "Computational Commerce: a



Vision for the Future" at the 13th Int'l Conf. on Electronic Commerce and Web Technologies (EC-Web 2012), in Vienna, Austria in Sept. The paper is co-

authored by her advisor, ISR Director **Richard N. Taylor**.

Joel Ossher (C. Lopes, advisor) presented his paper "ASTRA: Bottom-up Construction of Structured Artifact Repositories" at the 19th Working Conference on Reverse Engineering, (WCRE 2012) in Kingston,



ON, Canada in October. The paper is co-authored by Ph.D. student **Hitesh Sajjani** and his advisor **Cristina Videira Lopes**.

For more information on students: <http://www.isr.uci.edu/people.html>



ISR STUDENT NEWSBRIEFS

Thomas Debeauvais (C. Lopes, advisor) spent his summer as an intern at PARC in Palo Alto, CA where he worked on data mining and business intelligence for World of Warcraft™ data, predicting what motivates people to play, how dedicated people perceive themselves, and differences between Taiwan/China and Europe/US.



Debeauvais

Fang Deng (J. Jones, advisor) spent her summer interning at Google ChromeOS in Mountain View, CA where she worked on performance and endurance testing of the Chrome browser.



Deng

Bart Knijnenburg (A. Kobsa, advisor), interned this summer at Samsung Information Systems America (SISA) R&D Center in San Jose. The focus of his project was to understand and influence the user's decision to share their location. He also presented his paper "Inspectability and Control in Social Recommenders" at the 6th ACM



Knijnenburg

Conference on Recommender Systems (RecSys 2012), in Dublin, Ireland, in Sept. The paper was co-authored by Svetlin Bostandjiev and John O'Donovan of UC Santa Barbara, and his advisor Prof. **Alfred Kobsa**.

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oping software tools to engender trust in collaboration. Redmiles and his team are hypothesizing and evaluating specifically what kinds of information tools can be provided to engender trust. The work is ongoing.

To read more about cultural differences in general, a good starting point is the book by Hofstede et al., *Cultures and Organizations: Software of the Mind – Intercultural Cooperation and Its Importance for Survival*.

In general, publications and other information from Redmiles' research group is available to view at their Collaboration Research in Action, Design & Learning (CRADL) website: <http://cradl.ics.uci.edu>.

To read more about their observations of cultural differences in distributed development teams, see the paper on the website entitled *Trust and Surprise in Distributed Teams: Towards an Understanding of Expectations and Adaptations*. To read more about their brainstorming experiment that discusses cognitive and affective trust, see the paper *Supporting Initial Trust in Distributed Idea Generation and Evaluation*. Finally, to read more about software tools for supporting trust, see *Foundations for the Design of Visualizations that Support Trust in Distributed Teams*.

Prof. Redmiles' research group can be reached at cradl_info@ics.uci.edu.

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UCI Home to Intel Science and Technology Center for Social Computing

Prof. **Paul Dourish** is co-leading the newly established Intel Science and Technology Center (ISTC) for Social Computing at UC Irvine, together with UCI Anthropology and Law professor Bill Maurer and Scott Mainwaring of Intel Labs. Launched in late June 2012, the interdisciplinary center applies

The center defines social computing as the study of information technologies and digital media as social and cultural phenomena. Rather than using computing to understand the social, the center uses social science to understand the contemporary phenomena of computing – from social networks to e-government. Its goal is to bridge gaps between technical and social disciplines and understandings, and create new ways for social scientists, designers, and technologists to inform, challenge, and advance each others' work.

Like other Intel Science and Technology Centers, the Social Computing center uses an open, collaborative model of industrial-academic partnership. Intel funds the center's activities, but all research results will be published and software developed will be open-source, to encourage widespread sharing of information and results and to avoid IP issues that have hindered other models.

social science and humanities to the design and analysis of digital information.

The Social Computing center functions as a single distributed research group, across disciplines and universities. The center is based at UCI, with four partner ("spoke") institutions: Cornell University, Georgia Tech, Indiana University, and New York University. The five campus center will receive \$12.5 million over five years from Intel. UCI will receive \$5 million; \$7.5 million will be divided among the four spoke universities.

Materialities of Information	• Re-thinking information as grounded in materials and physical objects
Subjectivities of Information	• Moving beyond "the user" as center of user experience and user-centered design
Information Ecosystems	• How we relate to each other in, around, and through data
Creativity and Collectivity	• Group-embedded technical creativity and how it can change the world
Algorithmic Living	• Digital representations and algorithms that change how we understand ourselves

The figure above lists five research areas the center will focus on that have significant opportunity for impact.

For more information, visit:
<http://socialcomputing.uci.edu/>

RESEARCH BRIEFS

Prof. **Alfred Kobsa** gave a keynote speech on "Personalization with User-Tailored Privacy" at the 20th International Symposium on Methodologies for Intelligent Systems (ISMIS'12) in Macau, China in December. Kobsa was also a visiting scientist at Microsoft Research in Redmond, WA in the Fall quarter where he conducted research on users' privacy-related attitudes and behavior regarding client-side personalization. He was hosted by Mary Czerwinsky.

Prof. **André van der Hoek** is serving as an Editor in Chief for the new *Journal of Software Engineering Research and Development (JSERD)*, which is part of SpringerOpen – a suite of fully Open Access journals from Springer. ISR Prof. **Nenad Medvidovic**, USC, is serving on the Editorial Board.

ISR STUDENT NEWSBRIEFS

Arthur Valadares (C. Lopes, advisor) recently presented two conference papers. "RESTful Massively Multi-



User Virtual Environments: A Feasibility Study," authored by his advisor Prof. **Cristina V. Lopes**, Ph.D. student **Thomas Debeauvais**, and Valadares, was presented

at the Int'l Games Innovation Conf. (IGIC 2012) in Rochester, NY in September. He also presented "Evolution of Scalability with Synchronized State in Virtual Environments," co-authored by Debeauvais and Lopes, at the 5th Int'l Workshop on Massively Multiuser Virtual Environments Workshop (MMVE 2012) in Munich, Germany in October.

Maryam Khademi's (C. Lopes, advisor) paper "Haptic Augmented Reality to Monitor Human Arm's Stiffness in Rehabilitation" was



accepted to the 2012 IEEE EMBS Conf. on Biomedical Engineering and Sciences (IECBES), held in Langkawi, Malaysia in December. The paper is co-authored

by visitor **Hossein Mousavi Hondori**, Lucy Dodakian of UCI Occupational Therapy, Steven C. Cramer of UCI Neurology, and her advisor **Cristina V. Lopes**. Additionally, Khademi's poster entitled "Optical Illusion in Augmented Reality" was presented at the 18th ACM Symposium on Virtual Reality Software and Technology (VRST 2012) in Toronto, Canada, in December. The poster was co-authored by Hondori and Lopes.

ISR STUDENT NEWSBRIEFS

Hitesh Sajnani (C. Lopes, advisor) spent his summer as an intern at



Microsoft Silicon Valley in the Media Room lab where he focused on entity resolution. He also attended the Mining Summer School MSR Vision

2020, held in a Dagstuhl-like setting, where he participated in free-form, focused discussions on mining software repositories (MSR) topics and the future of MSR.

Xinru Page (A. Kobsa, advisor) is the lead Co-Organizer of the Workshop



on Measuring Networked Social Privacy, to be held at the 16th ACM Conference on Computer Supported Cooperative Work and Social Computing

(CSCW 2013) in February in San Antonio, TX.

Eric Chiquilla (A. van der Hoek, advisor), an undergraduate student



working with visitor **Thomas La Toza** on a crowd source programming project, spent his summer interning at Amazon in Seattle where he created a web GUI that

communicated with his team's code base to determine reasons for why something is not release date deliverable.



ALUMNI PROFILE

Dr. Jason Robbins, 1999 ISR Graduate

“Turbo Pascal was like a calling in high school”, remembers ISR alumnus **Jason Robbins**. “I knew that was what I wanted to do with my life: build tools like that so more people could write better software. I’m still working on it.”

While in high school, Robbins began his career working at the Rockwell Science Center in Thousand Oaks (currently part of Teledyne) where he focused on visual programming tools for factory automation. He then earned a B.S. in Computer Science at UCLA in 1992, and stayed on as a staff programmer on a research project

for intelligent user interfaces. Robbins began his graduate career at UC Irvine in 1993, and returned to Rockwell during the summers throughout many of his graduate school years. “Rockwell was very supportive of me, I think they hired me on about ten separate occasions. I really learned what corporate research was like while there.”

When deciding on graduate schools, Robbins had narrowed it down to a few schools that were strong in software engineering tools. “**Clark Turner**, a Ph.D. student at the time (now a Professor at Cal Poly San Luis Obispo, and an ISR alumnus), made a positive impression on me when I came to UCI to look around.” But there was also a sign: “They had a large research project going on at the time called the Arcadia Project; the name ‘Arcadia’ sounded like ‘arcade’, and to me, as a child of the 70’s, that was home,” laughed Robbins.

Once at UCI, Robbins got right to work. “We just had a great bunch of students coming in at that time. We all became good friends, and pushed each other to do our best. Both **Neno Medvidovic** (now a Professor at USC, and an ISR faculty member) and I published a ton of papers, more than we probably would have without that friendly competition.” Robbins’ work skewed toward tools with practical impact and innovative user interface (UI) features. “I looked at years of great work by other researchers that never made it

RESEARCH BRIEFS

Prof. **Walt Scacchi** served as General Co-Chair for the 2012 IFIP International Conference on Open Source Systems (OSS 2012), held in Hammamet, Tunisia in September. He also presented a paper there, “Developing Secure Systems using Open Architectures with Open Source and Closed Source Components,” co-authored by ISR Project Scientist **Thomas Alspaugh**.

Prof. **Cristina Videira Lopes** is serving as Program Chair for the OOPSLA Track at the Fourth Annual ACM conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH 2013).

Alumnus **Girish Suryanarayana**, a Member of the Technical Staff at Siemens Corporate Research & Technologies in Bangalore, India, has joined the advisory board for the journal *IEEE Software*.

Project Scientist **Ban Al-Ani**, Prof. **David Redmiles**, and Alumnus **Cleidson de Souza** of UFPA & Vale Institute of Technology, Brazil, are leading the team of organizers of the Workshop on Trust in Virtual Teams: Theory and Tools at the ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2013), to be held in February in San Antonio, Texas.

past the prototype stage, and I thought there was huge value there that just needed to be more usable to have real world impact.” Robbins also learned some of the entrepreneurial spirit that was taking root at UCI at the time. “ISR Director **Richard Taylor** was teaching us how to distill down our ideas and make them into compelling proposals. He was teaching us the business of research, but it was also the first Internet bubble, so it really set an example.”

Robbins chose Prof. **David Redmiles** as his advisor. “David was part of a new generation of faculty to join the ICS department that set the stage for the department to grow into a school.” Prof. Redmiles’ research interests aligned well with Robbins’. “David’s advisor, Prof. Gerhard Fischer from the University of Colorado at Boulder, came to give a talk about design environments, and I thought it was a perfect match for me: intelligent user interfaces and a wealth of research results that deserved wider usage.” Robbins began work on a series of design environment prototypes, both at Rockwell and UCI, including a tool for UCI’s C2 architec-

tural style, and ultimately the open source ArgoUML tool.

“My thesis was half theory and half system-building,” recalls Robbins. “I really enjoyed learning theories of usability, CSCW, and cognitive issues of decision making.” But most of his time was spent developing ArgoUML and publishing as part of UCI’s research team. Robbins made ArgoUML open source to get more impact and external evaluation, though releasing open source code was not common at the time. “I remember meeting with the campus lawyers and getting some puzzled looks,” mused Robbins. The experience of discussing ArgoUML with outside contributors proved positive, and initiated his thinking about how to manage open source projects and communities.

Robbins attended the first O’Reilly Open Source Convention (OSCON) where he met Brian Behlendorf, who had just founded CollabNet. Behlendorf, who had worked with ISR alumnus **Roy Fielding** to start the Apache Software Foundation, hired Robbins to work at CollabNet upon graduation in 1999. “Life at a start-up had

ISR Technical Reports Available Online

ISR technical reports present information resulting from student and faculty research carried out under the auspices of the Institute. They showcase early results not available in print elsewhere. ISR technical reports are available in PDF on the ISR website. Recent reports include:

“Communication and Capability URLs in COAST-based Decentralized Services”

Michael M. Gorlick, Richard N. Taylor
UCI-ISR-12-11, December 2012

“Motive: Mobile Code to Support an Architectural Style for Adaptive Decentralized Applications”

Michael M. Gorlick, Kyle Strasser, Richard N. Taylor
UCI-ISR-12-10, September 2012

“A Multidimensional Evaluation of Integrative E-commerce Architectures”

Alegria Baquero, Richard N. Taylor
UCI-ISR-12-9, September 2012

“The Future of Research in Computer Games and Virtual Worlds: Workshop Report”

Walt Scacchi (Ed.)
UCI-ISR-12-8, July 2012

All ISR technical reports are available at:

<http://www.isr.uci.edu/tech-reports.html>

ISR STUDENT NEWSBRIEFS

Nicholas DiGiuseppe (J. Jones, advisor) presented two papers at the



20th ACM SIGSOFT Int’l Symp. on the Foundations of Software Engineering (FSE 2012), both in the NIER Track. The papers, entitled “Semantic Fault

Diagnosis: Automatic Natural-Language Fault Descriptions” and “Concept-Based Failure Clustering,” were co-authored by his advisor Prof. **James A. Jones**. DiGiuseppe is also the recipient of the NSF Graduate Research Fellowship.

Kristin Roher (D. Richardson, advisor) has been awarded a Eugene



Cota-Robles (ECR) Fellowship, the most prestigious diversity fellowship offered at UCI. The fellowship is designed to place students interested in careers in academic

teaching and research on a fast-track towards achieving their doctoral degree.

Francisco Servant (J. Jones, advisor) presented his paper “History Slicing: Assisting Code-Evolution



Tasks” at the 20th ACM SIGSOFT Int’l Symp. on the Foundations of Software Engineering (FSE 2012), in Carey, NC in November. The paper was co-authored by his

advisor Prof. **James A. Jones**.

a totally different feel than Rockwell,” said Robbins. “My very first day on the job, I was in a conference call making promises about delivering a product to our biggest customer, and I didn’t even have a desk or computer yet.” Robbins got to do a little bit of everything in the early days of CollabNet, “Engineering, User Experience Design (UX), sales support, end-user support, operations, I even helped wire up the old office. It was a lot of adrenaline-fueled all-nighters in the first two years.” His titles at CollabNet included Principal Engineer and Senior Product Manager. As the company grew, the original jack-of-all-trades roles were replaced with dedicated people in each role.

By 2003, the adrenaline had run out. “I had lunch with David Redmiles, and we talked about why people get into academia and he asked me if I had given it a full shot, and the truth is that I hadn’t.” Robbins returned to UCI as a lecturer and taught software tools and methods and senior project courses, where he tried to give his students tools to take with them into their first jobs. “Honestly, I thought teaching would be a part-time job, but it turned out to be very intense.” Robbins revisited his prior research on cognitive issues of decision-making and writing and saw how much value there was in the simple idea of using templates. “Templates were not researchy enough for my dissertation, but when it actually came time to help my students succeed at ambitious projects, templates for project documents were a hit, ... like a homerun. It felt like cheating compared to the old way, which meant I was onto something.”

Robbins released the templates he produced for the courses as the ReadySET open source project. In late 2004, he reworked them into the ReadySET Pro product, and learned how to run a small online business. ReadySET Pro sold over a thousand copies all over the world. “I sold copies to users in Uganda and Andorra... I thought Andorra was a planet in Star Trek!” One of the lessons Robbins learned was the cost and effectiveness of traditional advertising vs. the new pay-per-click model offered by Google. “It wasn’t even close. Inspired, I chatted with Greg Stein (of CollabNet, Subversion, and WebDAV fame) who was at Google, and then I got out my CS theory books to prep for an interview there.”

ISR EVENT SCHEDULE

Mark your calendars now!



March 15, 2013

ISR Distinguished Speaker: Prof. Arie van Deursen

Delft University of Technology

“Who is Afraid of Change: On the use of Metrics to Assess Software Evolvability”

April 5, 2013

ISR Distinguished Speaker: Prof. David S. Rosenblum

National University of Singapore

“Felicitous Computing”



April 19, 2013

ISR Distinguished Speaker: Prof. Jane Cleland-Huang

DePaul University

“Preserving, Generating, and Visualizing Knowledge of Architecturally Significant Requirements in Source Code”

May 17, 2013

ISR Distinguished Speaker: Prof. Lionel Briand

University of Luxembourg

“Scalable and Cost-Effective Model-Based Software Verification and Testing”

May 31, 2013

ISR Research Forum: Where Research Meets the Real World

Keynote: Prof. Nenad Medvidović, University of Southern California

For more information:

<http://www.isr.uci.edu/events.html>

Robbins’ first project at Google in 2005 was PicasaWeb, but he soon got involved in starting Google Code (code.google.com). “I tried to take what I knew about software engineering tool usability, what I had learned from supporting CollabNet users and my students, and the Google style of clean UI design, and put that all together into a free OSS hosting service with broad appeal.” According to Robbins, Google Code has done very well, hosting tens of thousands of active projects, and inspiring a rejuvenated project hosting product space. Google itself has gone from OSS consumer to a huge producer of open source including many highly strategic products (Chrome, Android, Google Web Toolkit, Closure, parts of AppEngine), and over one thou-

sand smaller Google-sponsored projects. Robbins, a Senior Software Engineering at Google, is currently focusing on open source tools for the Chrome team.

Robbins can be reached at: jrobbins@google.com.

ISR

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