JERRY ALAN FAILS

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PROFILE

A PhD candidate in computer science with a background in databases, image processing, user interfaces, machine learning, and human development. My research focuses on HCI (human-computer interaction) an interdisciplinary research area. I am deeply involved with the design, development, and evaluation of technologies for young children. My PhD research focuses on collaboratively using mobile devices to overcome their interactive limitations. I am currently seeking employment – academic positions and industry opportunities.

EDUCATION

University of Maryland — College Park, Maryland
PhD – Computer Science — 2003 - Present

- PhD Research: *Mobile Collaboration for Young Children*
- Coursework GPA: 3.88
- Entered program as a Research Assistant
- Anticipated graduation date August 2009

Brigham Young University — Provo, Utah
MS – Computer Science — 2001 - 2003

- Master Thesis: *Image Processing with Crayons*
- Coursework GPA: 3.93
- Teaching and Research Assistant

BS – Computer Science Major — 1995 - 1996; 1998 - 2001

- Coursework GPA: 3.89
- University Scholarship
- Achieved Dean's List honor roll five times
- Member: Golden Key National Honor Society
- Minors: Portuguese and Marriage, Family and Human Development

RESEARCH/TEACHING EXPERIENCE

Instructor – CMSC 250 Discrete Structures — June 2007 – July 2007
Computer Science Department – University of Maryland — College Park, Maryland

The University of Maryland's Computer Science department is an accredited and acclaimed institution of learning. I instructed fourteen students in an accelerated four-credit, required course, CMSC 250 Discrete Structures.

- Course included the following topics: propositional logic, predicate calculus, elementary number theory and proofs, summations, recurrences, mathematical induction, set theory, counting and combinations, functions, the pigeonhole principle, and relations (reflexivity, symmetry, transitivity, etc.)
- Used the textbook *Discrete Mathematics with Applications*, third edition, Susanna Epp, Brooks/Cole – Thomas Learning, 2004, ISBN 0-534-35945
- Composed 13 homework assignments, five quizzes, and three exams (including the final) creating original problems, using the book, and modifying previous instructors materials

Research Assistant — Aug 2003 – Present
HCIL – University of Maryland — College Park, Maryland

The HCIL (Human-Computer Interaction Lab) is an internationally recognized lab that concentrates on issues related to how people interact with computers. I work with Allison Druin's focused research groups, Classroom of the Future and Kidsteam on educational technologies for young

children ages 4-10. Kidsteam is an intergenerational design team that meets for two weeks every day at the end of summer, and twice a week during the school year. It includes several adult researchers and six children ages 6-10.

- Organized and managed numerous Kidsteam design and evaluation sessions
- Assisted in the management and execution of a large user study involving evaluating the impact of an educational product; the study involved pre and post interviews of 240 children ages 4-7 as well as qualitative observations for each child participating in the various experimental treatments
- Paper reviewer and student volunteer at IDC (Interactive Children and Design) 2004-2007
- Worked with partners including the National Park Service, Microsoft, Fisher Price, Sesame Workshop, We are Family Foundation, Discovery
- Coauthored several papers and a journal article with various collaborators including those not in my immediate research group
- Immediately accepted as a Research Assistant to work with HCIL

Teaching/Research Assistant
May 2001 – Jul 2003

ICE Lab – Brigham Young University
Provo, Utah

The ICE (Interactive Computing Everywhere) Lab is an HCI centered lab, researching and developing new ideas in interactive architectures, speech interaction, novel interfaces, and applied machine learning. It is directed by renowned HCI researcher Dan R. Olsen Jr.

- Served as a teaching assistant (TA) for Introduction to User Interfaces and Advanced User Interface courses; as a TA I individually helped students with difficult programming and user interface concepts, advised the development of projects, and graded programming projects
- As a research assistant, I published three papers; two received best paper awards in sequential years at IUI and the third was at the premiere HCI conference ACM SIGCHI 2003

Language Instructor
Sep 1998 - Jun 1999

Missionary Training Center
Provo, Utah

Taught numerous sessions of an eight-week, intensive Portuguese language course to volunteer missionaries going to live in Brazil or Portugal for two years.

- Successfully prepared 10 (±2) volunteers every eight weeks to teach, live and interact in the Portuguese language
- Teaching included grammar, vocabulary, reading comprehension, and presenting messages
- Gave individual assistance to those who had more difficulty with the language
- One of few asked to continue teaching after most of the Portuguese program was transferred to Brazil

PROFESSIONAL EXPERIENCE

Developer
Feb 2000 – May 2001

KIVA (now merged with ACCELA)
Sandy, Utah

KIVA provides integrated development management solutions to local and state governments; it is an Oracle-based database application that provides a uniform system for the many departments within city, county and state government. Duties and responsibilities included:

- Designated as the primary custom reports developer for KIVA's largest account: Kansas City; also assigned to work with other custom reports for San Diego County, Henderson, and Topeka
- Created Oracle Reports using Oracle Developer/2000, Reports 2.5, Reports 3.0 and Reports 6*i*
- Modifed SQL*Plus C Reports
- Converted C reports to Oracle reports
- Developed a user-friendly interface that automates the installation and update processes for our clients; the program, written in Visual Basic, connects to a client database and runs the necessary SQL scripts to actualize the database; it saves individualized client information for easy updating

Product Release Team Leader
Sep 1999 - Mar 2000

KIVA
Sandy, Utah

- Organized and coordinated release versions of the KIVA product
- Reduced the Areadme.txt@ file creation time by more than 400% by developing a PERL script to compile a Areadme.txt@ file from scattered developer fix comments

- Assessed, designated and completed testing for updates and new releases; documented the release process and initiated discussion for a complete modification of the release process to make it more automated spurring a makeover of the release process
- Created, distributed and deployed the CDs and update patches that are released to the clients

Support Specialist Jun 1999 - Feb 2000

KIVA Sandy, Utah

- Designed, specified and wrote custom data conversion scripts in SQL*Plus (Oracle 7)
- Fielded incoming technical support calls from clients; solving technical questions regarding our software as well as Oracle SQL *Plus and improving customer relations
- Trained six KIVA personnel in the use of the KIVA software as well as other software (e.g. Microsoft Word, Excel, WordPerfect, QuattroPro, etc.)

Database Design / Developer Aug 1997 - Feb 1998

The Church of Jesus Christ of Latter-day Saints Porto, Portugal

Developed a database in MS Access as a volunteer representative in Portugal; this project centralized the information for several reports C automating the production of reports and eliminating the manual production of each individualized report; the database greatly reduced administrative overhead, enhanced the tracking of resources and provided for simple evaluation to improve efficiency; the database:

- Administered the data for the mission organization
- Kept track of changing positions and locations of 140 volunteers
- Maintained organizational charts for all of the volunteers
- Tracked statistics on the actions of the volunteers
- Created dynamic graphical statistical reports according to user-chosen hierarchical groupings and characteristics
- Logged financial transactions, logistical records (housing, bills, etc), personal information, etc

SKILLS

Programming Languages

- Visual Studio .NET (C#)
- Java
- C / C++ (Unix & Windows)
- Pascal
- PERL
- Scheme
- Assembly
- PHP

DB Development

- PL/SQL & SQL
- Oracle SQL *Plus
- Oracle Developer/2000, Reports 2.5, 3.0 & 6*i*
- Oracle Tools: Oracle SQL *Loader, Import, Export, etc.
- MS Access
- MySQL

Other

- Covey Leadership Training
- Read, write and speak fluent Portuguese

MEMBERSHIPS AND AWARDS

- Research assistantship for PhD studies (starting in 2003)
- University of Maryland funded two-year additional scholarship/fellowship (2003-2005)
- Outstanding Paper Award at IUI 2003 for *Interactive Machine Learning*
- Distinguished Paper Award at IUI 2002 for *Light Widgets: Interacting in Every-day Spaces*
- Research assistantship for Masters studies (2001-2003)
- Lifetime Member of Phi Kappa Phi (since 2000)
- Member of the Golden Key Honors Society (since 1999)
- Member of the BYU Chapter of ACM (Association for Computing Machinery)
- Brigham Young University Scholarship for all of undergraduate studies
- BYU Computer Science Dean's List honor roll five times

PUBLICATIONS

Journal Articles

Guha, M. L., Druin, A., Chipman, G., Fails, J. A., Simms, S. and Farber, A. Working with young children as technology design partners. Communications of the ACM, 48, 1 2005), 39-42. ACM Press.

Book Chapters

Fails, J.A., Druin, A., Bederson, B., Weeks, A., Komlodi, A., Rose, A. and Browne, T. A child's mobile digital library: collaboration, community and change. In Druin, A. ed. Mobile Technology for Children: Design for Interaction and Learning (In Press), Morgan Kaufmann, New York, 2009.

Full Conference Papers

Chipman, G., Druin, A., Beer, D., Fails, J. A., Guha, M. L. and Simms, S. A case study of tangible flags: a collaborative technology to enhance field trips. In Proceedings of the Interaction Design and Children (IDC) (Tampere, Finland, June 7-9, 2006), p. 1-8. ACM Press.

Fails, J. A., Karlson, A. K., Shahamat, L. and Shneiderman, B. A visual interface for multivariate temporal data: finding patterns of events across multiple histories. In Proceedings of the Visual Analytics And Technology (VAST) (Baltimore, Maryland, October 31 - November 2, 2006), p. 167-174. IEEE Press.

Fails, J. A., Druin, A., Guha, M. L., Chipman, G., Simms, S. and Churaman, W. Child's play: a comparison of desktop and physical interactive environments. In Proceedings of the Interaction Design and Children (IDC) (Boulder, Colorado, June 8-10, 2005), p. 48-55. ACM Press.

Olsen, D. R., Taufer, T. and Fails, J. A. ScreenCrayons: Annotating anything. In Proceedings of the ACM Symposium on User Interface Software and Technology (UIST) (Santa Fe, New Mexico, October 24-27, 2004), p. 165-174. ACM Press.

Guha, M. L., Druin, A., Chipman, G., Fails, J. A., Simms, S. and Farber, A. Mixing ideas: a new technique for working with young children as design partners. In Proceedings of the Interaction Design and Children (IDC) (College Park, Maryland, June 1-3, 2004), p. 35-42. ACM Press.

Fails, J. A. and Olsen, D. R. A design tool for camera-based interaction. In Proceedings of the Conference on Human Factors in Computing Systems (CHI) (Ft. Lauderdale, Florida, April 5-10, 2003), p. 449-456. ACM Press.

Fails, J. A. and Olsen, D. R. Interactive machine learning. In Proceedings of the International Conference on Intelligent User Interfaces (IUI) (Miami, Florida, January 12-15, 2003), p.39-45. ACM Press. *Best Paper Award*

Fails, J. A. and Olsen, D. R. Light widgets: interacting in every-day spaces. In Proceedings of the International Conference on Intelligent User Interfaces (IUI) (San Francisco, California, January 13-16, 2002), p. 63-69. ACM Press. *Best Paper Award*

Workshop Papers

Guha, M. L., Druin, A., and Fails, J. A. Designing with and for children with special needs: An inclusionary model. In Proceedings of the Interaction Design and Children (IDC) (Chicago, Illinois, June 11-13, 2008). ACM Press.

Doctoral Consortiums

Fails, J.A. Mobile Collaboration for Young Children. In Proceedings of the Interaction Design and Children (IDC) (Aalborg, Denmark, June 6-8, 2007), p.181-184. ACM Press.

Thesis

Fails, J. A. Image processing with crayons. Master's Thesis at Brigham Young University, p 115.

POSTERS

Refereed

Fails, J.A., Druin, A., Chipman, G., Guha, M.L. and McGehee, K. Mobile collaboration for young children. In Proceedings of the Interaction Design and Children (IDC) (Aalborg, Denmark, June 6-8, 2007).

Chipman, G., Druin, A., Guha, M.L., Fails, J.A. and Churaman, W. Collaborative creation of knowledge artifacts in an outdoor environment for young children. In Interaction Design and Children (IDC), (Boulder, Colorado, Jun 8-10, 2005).

Invited

Fails, J.A., Druin, A., and Guha, M.L. Mobile collaboration for young children (Poster). In Human-Computer Interaction Lab (HCIL) Symposium, (College Park, Maryland, May 29-30, 2008).

Fails, J.A., Druin, A., and Guha, M.L. Mobile collaboration for young children (Poster). In NSF Sponsored Children's Mobile Workshop, (College Park, Maryland, February 21-22, 2008).

Fails, J.A., Druin, A., Chipman, G., Guha, M.L. and McGehee, K. Mobile collaboration for young children (Poster). In Human-Computer Interaction Lab (HCIL) Symposium, (College Park, Maryland, May 31-June 1, 2007).

TUTORIALS, LECTURES, PRESENTATIONS AND DEMONSTRATIONS

Co-Instructor (with Druin and Guha): Giving Children a Voice in the Design of Technology: Methods and Strategies (CHI, April 4-9, 2009)

Co-Instructor (with Druin and Guha): Giving Children a Voice in the Design of Technology: What's new and old but still works (CHI, April 10, 2008)

Panelist: Research Philosophies in Children's Technology Design (IDC, June 6, 2007)

Demonstrator: Mobile Collaboration for Young Children (Children's Mobile Workshop, February 21, 2008)

Presenter: Mobile Collaboration for Young Children (HCIL Symposium, May 31, 2007)

Lecturer: Mobile Computing (LBSC 698 – Children's Information Technology and Policy, February 21, 2007)

Demonstrator: International Children's Digital Library [ICDL – www.childrenslibrary.org] (WIRED NextFest, New York, September 29-30, 2006).

GRANTS AND FUNDING

Helped secure and/or maintain funding from the following institutions and partners:

- NSF Children's Mobile Workshop (2008) – $34,900
- Microsoft (2004-2006) – $100,000
- National Park Service (2004-2007) – $70,000
- Discovery (2005-2006) – $15,000

MENTORING OPPORTUNITIES

Kevin McGehee (May 2006 – August 2006) – Blair High School Intern (Silver Spring, Maryland), *Designing an Effective Data Synchronization Model for Collaborative Mobile Software*

Juliette Taillandier (August 2006 – December 2007) – EPF [Ecole d'Ingénieurs (Sceaux, France)], *Design and Development of Interfaces for Mobile Narratives*

Bobby Owolabi (August 2006 – April 2007) – UMD CS Undergraduate (College Park, Maryland), *Mobile Collaboration for Young Children*