AMANDA SWEARNGIN

Computer Science & Engineering, University of Washington, Seattle, WA, 98125

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EDUCATION

University of Washington *Began September 2015*
Ph.D. in Computer Science

University of Nebraska - Lincoln *May 2012*
Master of Science in Computer Science
GPA: 3.91
Thesis Title:
   CogTool-Helper: Leveraging GUI Functional Testing Tools to Generate Predictive Human Performance Models

University of Nebraska - Lincoln *May 2010*
Bachelor of Science in Computer Science
GPA: 3.62
Major GPA: 3.76

RESEARCH EXPERIENCE

Adobe Research, Creative Technologies Lab September 2016 - December 2016
Research Intern with Joel Brandt, Mira Dontcheva, and Morgan Dixon *San Francisco, CA*
· Researched, designed, and prototyped a system using Computer Vision and Machine Learning to reverse engineer
  and create vectorized wireframes and design mockups from screenshots of user interfaces.

University of Washington September 2015 - Present
Graduate Research Assistant with Andy Ko and James Fogarty *Seattle, WA*
· Built *Genie*, a framework that uses program analysis methods (static and dynamic) to reverse engineer, describe,
  and enable re-targeting of inputs to alternate modalities (See Conference Publications).
· Built *EvoWeb*, a system and interactive web interface to explore user interface changes that have occurred between
  consecutive versions of a web interface (Not yet published).
· Designed and conducted HCI research study on Amazon Mechanical Turk to discover how people detect and
  describe change between two versions of a web page.

University of Nebraska - Lincoln August 2010 - May 2012
Graduate Research Assistant *Lincoln, NE*
· Developed *CogTool-Helper*, which uses automatic UI-model extraction and test case generation to automatically
  create storyboards and models for CogTool, a tool for predictive human performance modeling of user interfaces.
· Developed a method and algorithm for automatically inferring methods of completing a task on a UI beyond what
  the user specifies in CogTool.
· Studied the usefulness of CogTool-Helper for regression testing of user performance.
· Improved COMET (Community Event-Based Testing) website (comet.unl.edu) and integrated community bench-
  marks for testing event-driven software to the site.

University of Nebraska - Lincoln January 2010 - May 2010
Undergraduate Research Assistant *Lincoln, NE*
· Assisted with research on Combinatorial Interaction Testing (CIT) techniques.
· Developed several educational tutorials for the CIT web portal.

Holland Computing Center Summer 2008 - Spring 2010
Undergraduate Research Assistant *Lincoln, NE*
· Completed UCARE (Undergraduate Creative Activities and Research Experience) project which involved design
  and implementation of an interactive web portal for viewing real-time computing statistics, job-tracking, and
  accounting for the center's four computing clusters.
      Project Name: *MyHCC - An Interactive Window into Campus Computing Resources*
· Revamped and developed several tutorials for the center's website and created a virtual tour of the facility's
  resources.

· Researched and implemented a new LDAP system for authentication to the clusters and storing user data.

INDUSTRY EXPERIENCE

Microsoft Corporation   July 2012 - September 2015
Software Development Engineer II, Software Development Engineer in Test (SDET)   *Fargo, ND*
   · Designed and built UI components and controls for the web client framework of Dynamics AX 7, Microsoft's cloud-based ERP solution.
   · Built a system for versioning of UI pattern XML definitions and created upgrade framework which was put into place on the team.
   · Investigated and fixed bugs and performance issues in several large areas of the product, and was the primary owner for UI patterns and layout across the web-client.
   · Built automated visual regression testing tools for validating the product across multiple browsers and environments using C#/.Net, and Selenium, and implemented it on my team and across teams.
   · Was selected by Team Lead to mentor and conduct on-boarding training for 3 new members to the team.
   · Organized and coordinated networking and mentoring events for the Young Professionals of Microsoft Fargo as a member of the steering committee.

Cerner Corporation   Summer 2010
Software Engineering Intern   *Kansas City, MO*
   · Analyzed and implemented performance improvements that were put into production in Cerner's core application (PowerChart).
   · Improved code quality in various areas of PowerChart code with the help of static analysis tools.
   · Participated in an agile team and learned various features of Agile Development process.

Cerner Corporation   Summer 2009
Software Engineering Intern   *Kansas City, MO*
   · Designed UI and implemented an interactive patient summary web page for the iPhone using JavaScript, CSS, and HTML.
   · Implemented automatic script auditing procedures for patient information retrieval scripts using Cerner's internal database language (Similar to SQL).

WORK HISTORY

Cornerstone Campus Ministries   Fall 2008 - Spring 2010
Webmaster & Student Intern   *Lincoln, NE*
   · Developed and maintained website, and prepared media presentations for weekly worship services.
   · Organized activities, events, and fundraisers for the ministry.

Girl Empowerment and Mentoring (G.E.M.) for Computing Project   Fall 2008 - Spring 2009
Mentor   *Lincoln, NE*
   · Mentored middle school girls on a research project focusing on the technologies used to make hybrid vehicles more efficent.

REFEREED CONFERENCE PUBLICATIONS

Amanda Swearngin, Andrew Ko, James Fogarty. *Genie: Input Retargeting on the Web through Command Reverse Engineering.* SIGCHI Conference on Human Factors in Computing Systems (CHI), 2017. (acceptance rate: 25%).

Amanda Swearngin, Myra B. Cohen, Bonnie E. John, Rachel K.E. Bellamy. *Human Performance Regression Testing.* Int'l Conference on Software Engineering (ICSE), 2013. (acceptance rate: 18.5%), with **IBM Research**.

Amanda Swearngin, Myra B. Cohen, Bonnie E. John, Rachel K.E. Bellamy. *Easing the Generation of Predictive Human Performance Models from Legacy Systems.* SIGCHI Conference on Human Factors in Computing Systems (CHI), 2012. (acceptance rate: 23%), with **IBM Research**.

Sandeep Kaur Kuttal, Anita Sarma, **Amanda Swearngin**, Gregg Rothermel. *Versioning for Mashups — An Exploratory Study.* International Symposium on End User Development (IS-EUD), 2011. (acceptance rate: 27%).

Amanda Swearngin, Berthe Y. Choueiry, Eugene C. Freuder. *A Reformulation Strategy for Multi-Dimensional CSPs: The Case Study of the SET Game.* Symposium on Abstraction, Reformulation, and Approximation, 2011.

Amanda Swearngin, Myra B. Cohen, Bonnie E. John, Rachel K.E. Bellamy. *Easing the Generation of Predictive Human Performance Models from Legacy Systems.* Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI), pages 2489 - 2498, 2012. (acceptance rate: 23%)

- Collaboration with **IBM Research**

Sandeep Kaur Kuttal, Anita Sarma, **Amanda Swearngin**, Gregg Rothermel. *Versioning for Mashups — An Exploratory Study.* International Symposium on End User Development (IS-EUD), pages 25 - 41, 2011. (acceptance rate: 27%)

Amanda Swearngin, Berthe Y. Choueiry, Eugene C. Freuder. *A Reformulation Strategy for Multi-Dimensional CSPs: The Case Study of the SET Game.* Symposium on Abstraction, Reformulation, and Approximation (SARA), pages 107 - 116, 2011.

PATENTS

Linking graphical user interface testing tools and human performSance modeling to enable usability assessment, Rachel K. E. Bellamy, Myra B. Cohen, Bonnie E. John, Padmanabhan Santhanam, **Amanda Swearngin**, US Patent App. 13/672,237, 2012

PRESENTATIONS

Easing the Generation of Predictive Human Performance Models from Legacy Systems, Conference presentation at CHI (SIGCHI Conference on Human Factors in Computing Systems), May 0212.

An Update on COMET (Community Event-based Testing), Workshop presentation at TESTBEDS, co-located with ICST (International Conference on Software Testing, Verification, and Validation), March 2011.

TEACHING

Tutor, UW Computer Science & Engineering – Discrete Math, Software Design & Implementation, 2015-2016

ACADEMIC AWARDS & ACHIEVEMENTS

National Science Foundation Graduate Research Fellowship – 2016

Member of Upsilon Pi Epsilon Computer Science Honor Society – 2008 - 2012

Google Anita Borg Memorial Scholarship Finalist (One of 60 finalists out of 1200 applicants) – 2011

CRA-W Grad Cohort Participant – 2011

Google Diversity Award Recipient to attend ISSTA Conference – 2011

Grace Hopper Celebration of Women in Computing Scholarship Recipient – 2010

University of Nebraska - Lincoln Computer Science Cecilia Daly Scholarship – 2009 - 2010

UCARE - Undergraduate Creative Activities and Research Experience Project Grant – 2009 - 2010

Dean's List in College of Arts and Sciences – Spring 2007, Fall 2008, Spring 2010

UNDERGRADUATE AND GRADUATE LEADERSHIP AND VOLUNTEERING

ChickTech Seattle
    Mentor & Workshop Teacher – 2015 - 2016

TEALS Puget Sound CS Fair
    Volunteer – 2016

UW CSE Graduate Women's Organization
    Undergraduate Mentor – 2015 - 2016

Upsilon Pi Epsilon
    Treasurer – 2010 - 2012

Computer Science Graduate Student Association Board
    Member – 2011 - 2012

Computer Science Department Curriculum Committee
   Graduate Representative – 2010 - 2012

Kappa Phi Club (Christian Women's Organization)
   Founding member, Treasurer, and Assistant Sponsor – 2007 - 2012

Circle K International (Community Service/Leadership Organization)
   Treasurer and Vice-President – 2007 - 2010