AMANDA SWEARNGIN

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EDUCATION

University of Washington (Dec. 2019)
MS & Ph.D., Computer Science & Eng., GPA: 3.93
Area: HCI, Software Engineering
Advisors: Amy Ko, James Fogarty
⭐ NSF Graduate Research Fellowship

University of Nebraska-Lincoln (2012)
MS, Computer Science, GPA: 3.91
Area: HCI, Software Engineering
Advisor: Myra Cohen
⭐ Anita Borg Fellowship Finalist

University of Nebraska-Lincoln
BS, Computer Science, GPA: 3.
⭐ Dean's List: 2007 - 2008, 201

RESEARCH EXPERIENCE

University of Washington — Graduate Research Assistant   Sept. 2015 - Present
- Designed and developed 4 novel interfaces applying constraint solving, data-driven design, and machine learning to aid UI/UX designers in their use of examples and alternatives and in conducting usability evaluations within interactive design tools.
- Conducted quantitative experiments with 40 UX designers, and qualitative interviews with over 100 UX designers.

Microsoft Research — Research Intern   Summer 2019
- Developed and deployed 70 participant company-wide survey on information capture on mobile devices.
- Worked with 2 product teams to develop a cross-device app for capturing document resources, and deployed to 12 participants' mobile phones.

Google Research — Research Intern, Student Researcher   Summer 2018 - Spring 2019
- Developed crowdsourcing interfaces for tappability and target selection tasks, and deployed and collected 20k and 80k labels of mobile and web interface tappability, respectively, and over 40k labels of web target selection to predict user time to find and click on an element.
- Built a deep neural network model (Tensorflow) to automatically predict the tappability of mobile interfaces to help designers evaluate tappability of their interfaces without needing to collect any data.

Adobe Research — Research Intern   Fall 2016, Summer 2017
- Designed and developed *Rewire*, an interactive system to aid designers in leveraging example screenshots by inferring vectorized design documents with editable shape and style properties.
- Quantitatively evaluated *Rewire* with 16 UI designers, showing that it significantly improves the efficiency of designers in adapting screenshots, and gained design insights through qualitative interviews.

University of Nebraska-Lincoln — Graduate Research Assistant   Aug 2010 - May 2012
- Designed and implemented CogTool-Helper, which uses a UI testing automation framework to automatically generate storyboards to help designers evaluate and detect human performance regressions in user interfaces.

SELECTED INDUSTRY EXPERIENCE

Microsoft Corporation — Software Development Engineer II, SDET   July 2012 - Sept 2015
- Designed, developed, and tested web client framework features for Dynamics AX, and was the primary engineer for client layout and UI patterns.
- Developed visual regression testing framework to validate the product across browsers and environments, and deployed it into the build system.

SKILLS

Coding: JavaScript/TypeScript, HTML/CSS, Python, C/C++, Java, C#/.Net; **Frameworks**: React, NodeJS, Flask, Django, OpenCV; **Data Science/ML**: Tensorflow, GraphLab; **User Research**: Experimental Design, Quantitative & Qualitative Evaluations and Interviews, Crowd-sourced Online Experiments;

SELECTED PUBLICATIONS

Scout: Rapid Exploration of Interface Layout Alternatives through High-Level Design Constraints
Amanda Swearngin et al. ACM Human Factors in Computing Systems (CHI) 2020, *Conditionally Accepted*.

**Modeling Mobile Interface Tappability Using Crowdsourcing and Deep Learning**
Amanda Swearngin, Yang Li. ACM Human Factors in Computing Systems (CHI) 2019. ⭐ Google Research Collaboration

Rewire: Interface Design Assistance from Examples
Amanda Swearngin et al. ACM Human Factors in Computing Systems (CHI) 2018. ⭐ Adobe Research Collaboration
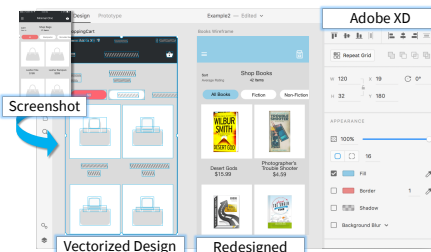
Easing the Generation of Predictive Human Performance Models from Legacy Systems
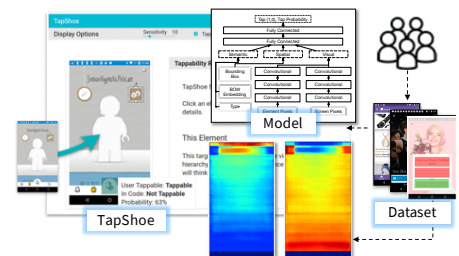Amanda Swearngin et al. ACM Human Factors in Computing Systems (CHI) 2012. ⭐ IBM Research Collaboration
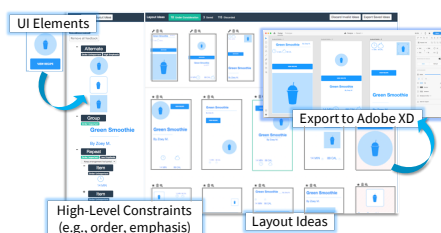
Scout: Using High-Level Constraints to Generate Interface Layout Alternatives
https://youtu.be/nWoLsMr_av8

Rewire: Inferring Mockups from Interface Screenshots
https://youtu.be/hxl_UPwlSgg

TapShoe: Deep Learning to Analyze Mobile Interface Tappability
https://ai.googleblog.com/2019/04/using-deep-learning-to-improve.html