

ALISON SMITH-RENNER

Interactive & Explainable Machine Learning | Human-Centered Design | Information Visualization | HCI

Research engineer with 11+ years of experience designing intuitive interfaces and interactive visualizations for machine learning algorithms. My research focuses on human-centered design for interactive machine learning systems to engender trust, improve performance, and support human-machine collaboration, such that end users can understand and analyze data without prior machine learning expertise.

EXPERIENCE

DECISIVE ANALYTICS Corporation

Principal Research Engineer, Human-Centered Machine Learning

Secret Clearance

March 2017 – Present

- Leads a team of engineers to design, build, and test machine learning applications and visualizations, which empower directed exploration and analysis of unstructured data (text, imagery, and video), such as for base defense, entity management, and acquisition analysis.
- Designs and evaluates mechanisms for algorithmic transparency and human-in-the-loop feedback.
- Leads research and development as a principal investigator for an analyst workspace for semi-automated product generation and for optimizing unstructured chat extraction through active learning.
- Communicates research and product results to customers, stakeholders, and the academic community.
- Drives business development initiatives through identifying relevant opportunities, cultivating existing customer relationships, system demonstrations, and white paper and proposal writing.

Senior Machine Learning UI/UX Engineer

March 2013 – March 2017

- Followed user-centered design practices for requirements gathering, iterative design, and evaluations.
- Conceptualized and implemented a document understanding and exploration tool built with angular and d3 to visualize the outputs of hierarchical topic modeling and facet analysis.

Machine Learning UI/UX Engineer

June 2009 – March 2013

- Engineered a concept search web application in angularjs using semantic role labeling algorithms.
- Implemented java-based software prototype for target resource allocation.

EDUCATION

Ph.D, Computer Science: Human-Centered Machine Learning, University of Maryland, College Park, 2020

Dissertation: *Designing for the Human in the Loop: Transparency and Control in Interactive Machine Learning*

M.S., Computer Science, University of Maryland, College Park, 2014

B.S, Mathematics: Computational Mathematics, The College of William and Mary, 2009

SELECT PUBLICATIONS & ACADEMIC EXPERIENCE

A Smith-Renner, R Fan, M Birchfield, T Wu, J Boyd-Graber, D Weld, L Findlater. "No Explainability without Accountability: An Empirical Study of Explanations and Feedback in Interactive ML." CHI, 2020.

A Smith-Renner, V Kumar, J Boyd-Graber, K Seppi, L Findlater. "Digging into User Control: Perceptions of Adherence and Instability in Transparent Models." IUI, 2020.

A Smith, V Kumar, J Boyd-Graber, K Seppi, L Findlater. "Closing the Loop: User-Centered Design and Evaluation of a Human-in-the-Loop Topic Modeling System." IUI, 2018.

A Smith, T Lee, F Poursabzi-Sangdeh, J Boyd-Graber, N Elmqvist, L Findlater. "Evaluating Visual Representations for Topic Understanding and Their Effects on Manually Generated Labels." Transactions of the Association for Computational Linguistics (TACL), 2017.

Workshop Organizer: Explainable Smart Systems at Intelligent User Interfaces (IUI), 2018-2021; Human-Centered Machine Learning Perspectives at CHI 2019

Program Committee: CHI (2017-2021), ACL (2018-2020), IUI (2018-2021)

SKILLS

javascript [angular, angularjs, d3]; html/css & sass

java, python, R

nlTK, weka, vw; git, npm, docker, jira

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