ALISON SMITH-RENNER

Interactive & Explainable Machine Learning | User-Centered Design | Computational Linguistics | HCI

Research engineer with 11+ years of experience designing, building, and evaluating intelligent systems and interactive visualizations for data exploration, analysis, and augmented decision making. My research lies at the intersection of AI/ML and human-computer interaction, building explainable and interactive AI/ML systems to engender trust, improve performance, and support human-machine collaboration. I aspire to make a dual impact—both in performing and publishing meaningful research but also developing wide-reaching products.

EXPERIENCE

DECISIVE ANALYTICS Corporation

Principal Research Engineer, Human-Centered AI/ML – Secret Clearance
March 2016 - Present

- Manages a team of engineers to design, build, and test AI/ML-infused applications and visualizations, utilizing natural language processing and computer vision algorithms, for unique client requirements, such as multi-modal threat detection, searching for complex events in text, and knowledge base management.
- Designed and evaluates algorithmic transparency and human-in-the-loop feedback mechanisms.
- Leads technical direction and cost, schedule, performance as principal investigator and project manager for $1M+ R&D portfolio including building an analyst workspace for semi-automated product generation and for optimizing unstructured tactical chat extraction through user-oriented active learning.
- Regularly interfaces with client stakeholders to identify requirements and design custom intuitive systems and visualizations to solve relevant problems and fit into existing analysis workflows.
- 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 UI/UX Engineer: March 2012 – March 2016

- 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. Published and presented this work at a 2014 ACL workshop on interactive language learning, visualizations, and interfaces.
- Built an image search web application from computer vision outputs (e.g., object detection, text extraction, etc.)

Software Engineer: June 2009 – March 2012

- Engineered a natural language, concept search web application in angularjs backed by semantic role labeling.
- Implemented a java-based software prototype for target resource allocation.

EDUCATION

Ph.D, Computer Science, 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." Intelligent User Interfaces (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: Transparency and Explanations in Smart Systems, IUI (2018-2021); Human-Centered Machine Learning Perspectives, CHI 2019; From "Explainable AI" to "Graspable AI", TEI 2021
Program Committee: CHI (2017-2021), ACL (2018-2020), IUI (2018-2021)

SKILLS

javascript [angular, angularjs, reactjs, d3, leaflet]; html/css & sass
java, python, R
nltk, weka, vw; git, npm, docker, jira

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