Jonathan Ito, PhD

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SUMMARY & BACKGROUND

I am a software engineer with a PhD in artificial intelligence and over 20 years of industry experience building scalable, performant, and maintainable systems. Currently, I am a software engineer at Snap leading the platform initiative to unify and create a single, authoritative User Profile system. This system powers a number of mission-critical machine learning and business use cases within Snap such as ad targeting, content ranking, and friend recommendations. I have also had the opportunity to work at Amazon, where I served as the tech lead for the Prime Video Santa Monica site focused on the Digital Video Supply Chain. While at Amazon I also led the rights, policies, and contracts domain across Seattle and Santa Monica. Prior to Amazon, I worked at Google as a software engineer in a cross-functional team focused on machine learning tools, techniques, and frameworks to support and enhance the display ads process for advertisers and publishers. I earned my PhD in Computer Science from the University of Southern California in Affective Computation, a branch of artificial intelligence which combines machine learning, behavioral, and cognitive science. I am passionate about solving complex and ambiguous problems that span teams, technologies, and ultimately delight the end user.

RECENT EXPERIENCE

Software Engineer, Snap (Santa Monica, CA - 2020-Present)

Technical Lead for both the (Ad) Targeting team within the Monetization organization and the overall cross-functional tech lead for the platform initiative to unify and build a single, authoritative User Profile system within Snap.

Accomplishments

- Led the (re)design for establishing a single, unified User Profile system which will ultimately power a number of mission-critical machine-learning and business use cases such as ad targeting, content ranking and discovery, and friending suggestions. Also drove alignment and consensus around the design across a number of diverse teams both within and outside of the Monetization and Ads organization
- Drove alignment around a high-level proposal for the creation of a number of platform capability initiatives built on top of the Unified User Profile. These include systems for data privacy governance, user profile quality assurance, self-service capabilities, and feature storage & discovery

Sr. Software Development Engineer, Amazon (Santa Monica, CA — 2017-2020)

Site Technical Lead for the Video Supply Chain and Video Central (Partner Facing) organizations (12 technical teams). Served as the domain technical lead across all Rights, Contracts, and Policies for both Santa Monica and Seattle (5 teams) and the technical lead of the overall architecture and strategy for the Supply Chain's integration with external business units (ads, live events, etc.).

Accomplishments

- Led the design, development, and launch of a Policy system which establishes a single authority for video content consumption configurations across the entire Prime Video ecosystem. This involved creating a reliable, performant, and scalable system that supports latencies of 20 milliseconds and one million transactions per second
- Served as the sole security certifier in Santa Monica, which involved performing security reviews and audits of systems and designs to ensure that sensitive data is protected before new features and products are launched.
- Led establishment of technical and architectural engagement model of the video supply chain. This involves defining appropriate architectural extension points and technical interfaces for enabling external organizations to leverage specific capabilities of the video supply chain while maintaining organizational and technical autonomy

- Participated in over 70 interviews and currently serving as an interview lead in which I facilitate and provide the final hiring determination in conjunction with the hiring manager
- Jointly led the establishment and development of the Santa Monica Prime Video teams. This involved establishing operational performance meetings, design reviews, launch readiness reviews, and team organizational structure
- Led the technical reorganization of Video Central (partner-facing video supply chain) teams around technical domains utilizing a domain-driven design paradigm to reduce technical overlap, consolidate technical domain expertise, and ultimately accelerate development velocity
- Designed a cross-org contract management system which encompasses the content acquisition process, legal agreements, finance and accounting, and dissemination of contractual terms across the video supply chain
- Presented company wide talks and external, industry talks (https://primevideosantamonica.splashthat.com/)

Software Engineer, Google (Venice, CA — 2013-2017)

Participated in the development, maintenance, and deployment of a machine learning infrastructure used to support the automated classification of web documents.

Accomplishments

- Participated in development, maintenance, and launch of in-market machine-learned classifiers ($10 million weekly spend), integral to display ads. This involved evaluating and implementing machine learning techniques, development of scalable frameworks for sampling data as well as training, evaluating, tuning, launching and monitoring classifiers.
- Led effort to automate the process of launching machine-learned classifiers. Duties involved the development of automated monitoring to detect classifier degradation and infrastructure to retrain and launch models

Volunteer co-chair of Technology Committee, Reading to Kids (Los Angeles, CA — 2009-Present)

Reading to Kids is a nonprofit promoting childhood literacy through monthly reading clubs of 500 volunteers and 2000 children across 7 Los Angeles schools. Duties include tech infrastructure maintenance and web development. The site, http://readingtokids.org, records volunteer attendance and school assignments related to the monthly reading clubs.

Accomplishments

- Primary site coordinator at Hoover Elementary during which I oversaw and coordinated the monthly reading clubs
- Actively maintained and developed new features for the Reading to Kids website
- Participated in executive-level meetings to help shape the future and direction of the organization

Postdoctoral & Graduate Researcher, University of Southern California Institute for Creative Technologies

Playa Vista, CA — 2005-2013

Member of the social simulation lab and emotion group. Pursued independent research related to affective computing, self-deception, computational models of appraisals and emotion, and contextually-sensitive decision methods.

Accomplishments

- Published numerous papers on contextual decision making, the potential of self deceptive strategies to be rational, and defining utility-based measures of communication consistency
- Principal investigator for the NSF East Asian and Pacific Summer Institute Fellowship grant

EDUCATION

Jonathan Ito, PhD

PhD in Computer Science: University of Southern California

Context Dependent Utility: An Appraisal-Based Approach for Modeling Decisions, Context, and Framing.

MS in Computer Science: University of Southern California

BS in Computer Science: University of California, Irvine

PUBLICATIONS

Jonathan Ito, David Pynadath, and Stacy Marsella. Modeling self-deception within a decision-theoretic framework. *Autonomous Agents and Multi-Agent Systems*, 20(1):3–13, January 2010.

Conference Publications

Jonathan Ito and Stacy Marsella. Context dependent utility: modeling decision behavior across contexts. In *Proceedings of 35th Annual Conference of the Cognitive Science Society* (to appear), 2013.

J. Ito and S. Marsella. Contextually-based utility: An appraisal-based approach at modeling framing and decisions. In *Twenty-Fifth AAAI Conference on Artificial Intelligence*, volume 2, pages 60–65, 2011.

Jonathan Y. Ito, David V. Pynadath, Liz Sonenberg, and Stacy C. Marsella. Wishful thinking in effective decision making (extended abstract). In Proceedings of the 9th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2010)., 2010.

Jonathan Y. Ito, David V. Pynadath, and Stacy C. Marsella. Self-deceptive decision making: Normative and descriptive insights. In Carles Sierra, Cristiano Castelfranchi, Keith S. Decker, and Jaime Sichman, editors, *Proceedings of the Conference on Autonomous Agents and Multiagent Systems AAMAS,* volume 2, pages 1113–1120. IFAAMAS, May 2009.

Jonathan Y. Ito, David V. Pynadath, and Stacy C. Marsella. Modeling self-deception within a decision-theoretic framework. In Helmut Prendinger, James C. Lester, and Mitsuru Ishizuka, editors, P*roceedings of the Conference of Intelligent Virtual Agents IVA*, volume 5208 of Lecture Notes in Computer Science, pages 322–333. Springer, September 2008.

Jonathan Y. Ito, David V. Pynadath, and Stacy C. Marsella. A decision-theoretic approach to evaluating posterior probabilities of mental models. In Christopher Geib and David Pynadath, editors, *Proceedings of the AAAI Workshop on Plan, Activity, and Intent Recognition (PAIR-07)*, volume WS-07-09 of AAAI Technical Report, pages 60–65. AAAI Press, July 2007.

J. Donnelly, G. Edwards, P. Haglich, J. Ito, K. Olin, and T. Padgett. Effects-based planning with strategy templates and semantic support. In *AeroSense* 2003, pages 27–35. International Society for Optics and Photonics, 2003.