Joshua Levy

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Work Experience

Amazon, Cambridge, MA
May 2017 – June 2023

Applied Science Manager, AWS Machine Learning Solutions Lab
June 2022 - June 2023

Managed a team of junior and senior research scientists, applied scientists, and machine learning engineers working on proof-of-concept solutions to machine learning problems across various industries and customers (mid-size and Fortune 500).

Senior Applied Scientist, **AWS Machine Learning Solutions Lab**
April 2021 - May 2022

Led the technical innovation on proof-of-concept solutions to machine learning problems faced by customers, primarily in the NLP domain.

Senior Research Scientist, Amazon Alexa
April 2020 – March 2021

Tech lead for the team that brought voice-based frustration detection to Alexa. We built deep learning models that enabled Alexa to learn and adapt in real-time to every utterance based on the tone of the customer.

Research Scientist, Amazon Alexa
May 2017 – March 2020

Worked on a conversational bot that leveraged reinforcement learning to adapt its behavior over time based on an automated reward signal.

Fellow, Insight Data Science, Boston, MA
January 2017 – March 2017

Developed a malaria forecasting model with Zenysis Technologies to improve bed net allocation in Ethiopia.

Graduate Researcher, Johns Hopkins University, Baltimore, MD
August 2011 - May 2017

Researched cortical mechanisms underlying timed decision-making using large electrophysiological datasets.

Consultant, Vigilant Medical, Baltimore, MD
September 2016 – January 2017

Wrote the research strategy for an NIH SBIR grant on using deep learning to detect coronary artery disease.

Education

PhD, Johns Hopkins University, Neuroscience, Baltimore, MD
2011 - 2017
BA, Princeton University, Molecular Biology & Neuroscience, Princeton, NJ
2007 - 2011

Publications

Jiang S, Syed T, Zhu X, **Levy J**, Aronchik B, Sun Y. Bridging self-attention and time series decomposition for periodic forecasting. Conference on Information and Knowledge Management (CIKM). 2022 Oct 17.

Li, M, Yang, B, **Levy, J**, Stolcke, A, Rozgic, V, Matsoukas, S, Papayiannis, C, Bone, D, Wang, C. Contrastive Unsupervised Learning for Speech Emotion Recognition. International Conference on Acoustics, Speech, and Signal Processing (ICASSP). 2021 Jun 11.

Kim Y, **Levy J**, Liu Y. Speech Sentiment and Customer Satisfaction Estimation in Socialbot Conversations. Interspeech. 2020 Aug 27.

Bodigutla P, Wang L, Ridgeway K, **Levy J**, Joshi S, Geramifard A, Matsoukas S. Domain-Independent turn-level Dialogue Quality Evaluation via User Satisfaction Estimation. Special Interest Group on Discourse and Dialogue (SIGDial). 2019 Aug 19.

Levy J, Zold C, Namboodiri V, Shuler M. The timing of reward-seeking action tracks visually cued theta oscillations in primary visual cortex. Journal of Neuroscience. 2017 Oct 25.

Namboodiri V*, **Levy J***, Mihalas S, Sims D, Shuler M. Rationalizing spatial exploration patterns of wild animals and humans through a temporal discounting framework. Proceedings of the National Academy of Sciences (PNAS). 2016 Aug 2.

Levy J, Namboodiri V, Hussain Shuler M. Memory bias in the temporal bisection point. Frontiers in integrative neuroscience. 2015 Jul 7.

Chen EY, Marre O, Fisher C, Schwartz G, **Levy J**, da Silveira RA, Berry MJ. Alert response to motion onset in the retina. Journal of Neuroscience. 2013 Jan 2.

* Authors contributed equally to this work

Patents

Multimodal sentiment detection. Kim Y, Liu Y, Hakkani-Tur D, Nelson T, Santos AC, **Levy J**, Gupta S. US Patent 11,501,794.