Alexander Ku

Email: alexku@google.com
Phone: +1 (650) 575-7547

Education

MS in Electrical Engineering & Computer Science from UC Berkeley, 2018
BA in Computer Science from UC Berkeley, 2017

Research interests

My research focuses on establishing computational parallels between learning in people and deep neural networks. In particular, how the mechanisms that enable generalization in both result in potentially harmful associations and biases. This broadly falls under the umbrella of cognitive science and interpretability.

Professional experience

Research Software Engineer at Google Research, since 2018
  Grounded language learning and interpretability

Research Intern at Google Brain, Summer 2018
  Deep learning for sequence assembly

Research Intern at Google Brain, Summer 2017
  Deep learning for variant calling

Teaching experience

Graduate Student Instructor at UC Berkeley, Fall 2017
  Data 8: The Foundations of Data Science

Undergraduate Student Instructor at UC Berkeley, Spring 2017
  CS 188: Introduction to Artificial Intelligence

Undergraduate Student Instructor at UC Berkeley, Fall 2016
  Data 8: The Foundations of Data Science

Publications

Journal articles

J Yu, Y Xu, JY Koh, T Luong, G Baid, Z Wang, V Vasudevan, **A Ku**, Y Yang, BK Ayan, B Hutchinson, W Han, Z Parekh, X Li, H Zhang, J Baldridge, Y Wu (2022). Scaling autoregressive models for content-rich text-to-image generation. *Transactions on Machine Learning Research (TMLR)*.

R Poplin, P Chang, D Alexander, S Schwartz, T Colthurst, **A Ku**, D Newburger, J Dijamco, N Nguyen, PT Afshar, SS Gross, L Dorfman, CY McLean, MA DePristo (2018). A universal SNP and small-indel variant caller using deep neural networks. *Nature Biotechnology, 36 (10), 983*.

Conference papers

A Kamath, P Anderson, S Wang, JY Koh, **A Ku**, A Waters, Y Yang, J Baldridge, Z Parekh (2022). A New Path: Scaling Vision-and-Language Navigation with Synthetic Instructions and Imitation Learning. *Under reivew*.

J Yu, X Li, JY Koh, H Zhang, R Pang, J Qin, **A Ku**, Y Xu, J Baldridge, Y Wu (2021). Vector-quantized image modeling with improved vqgan. *Tenth International Conference on Learning Representations (ICLR)*.

A Ku, P Anderson, J Pont-Tuset, J Baldridge (2021). Pangea: The panoramic graph environment annotation toolkit. *Proceedings of the Second Workshop on Advances in Language and Vision Research (ALVR)*.

M Zhao, P Anderson, V Jain, S Wang, **A Ku**, J Baldridge, E Ie (2021). On the evaluation of vision-and-language navigation instructions. *The 16th Conference of the European Chapter of the Association for Computational Linguistics (EACL)*.

A Ku*, P Anderson*, R Patel, E Ie, J Baldridge (2020). Room-Across-Room: Multilingual Vision-and-Language Navigation with Dense Spatiotemporal Grounding. *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP)*.

H Huang*, V Jain*, H Mehta, **A Ku**, G Magalhaes, J Baldridge, E Ie (2019). Transferable Representation Learning in Vision-and-Language Navigation. *Proceedings of the IEEE International Conference on Computer Vision (ICCV)*.

G Magalhaes, V Jain, **A Ku**, E Ie, J Baldridge (2019). Effective and General Evaluation for Instruction Conditioned Navigation using Dynamic Time Warping. *Advances in Neural Information Processing Systems Workshop on Visually Grounded Interaction and Language (ViGIL)*.

V Jain*, G Magalhaes*, **A Ku***, A Vaswani, E Ie, J Baldridge (2019). Stay on the Path: Instruction Fidelity in Vision-and-Language Navigation. *Proceedings of the 57th Annual Meeting of the Association for Computational Linguistics (ACL)*.

N Parmar*, A Vaswani*, J Uszkoreit, Ł Kaiser, N Shazeer, **A Ku**, D Tran (2018). Image Transformer. *Proceedings of the 35th International Conference on Machine Learning (ICML)*.

JC Peterson, JW Suchow, K Aghi, **AY Ku**, TL Griffiths (2018). Capturing human category representations by sampling in deep feature spaces. *Proceedings of the 40st Annual Conference of the Cognitive Science Society (CogSci)*.