

Aaron Chan

CONTACT INFORMATION

Website: aarzchan.com
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RESEARCH INTERESTS

natural language processing (NLP), machine learning (ML), model explainability, commonsense reasoning, knowledge representation, vision+language

EDUCATION

University of Southern California, Los Angeles, CA

PhD in Computer Science

Aug. 2017 - Present

- Adviser: Prof. Xiang Ren

University of Pennsylvania, Philadelphia, PA

MSE in Robotics

Aug. 2015 - May 2017

University of Maryland, College Park, College Park, MD

BS in Electrical Engineering

Aug. 2011 - May 2015

EXPERIENCE

University of Southern California, Los Angeles, CA

Graduate Teaching Assistant

Sept. 2019 - Dec. 2019

- CSCI 100xg: Explorations in Computing

University of Southern California, Los Angeles, CA

Graduate Research Assistant

Aug. 2017 - Present

- Adviser: Prof. Xiang Ren
- Proposed a method to improve commonsense QA performance by learning from knowledge graph explanations [7].
- Proposed a new commonsense reasoning model to better address fact sparsity in knowledge graphs [6].
- Analyzed the influence of knowledge graphs in knowledge graph augmented models [5].

Google, Mountain View, CA

Hardware Engineering Intern, Android Camera

May 2017 - Aug. 2017

- Host: Ying Chen Lou
- Worked on a saliency detection algorithm to improve camera autofocus on the Google Pixel phone.

GRASP Lab, University of Pennsylvania, Philadelphia, PA

Graduate Research Assistant

Feb. 2017 - May 2017

- Adviser: Prof. Jianbo Shi
- Constructed a first-person video dataset of one-on-one basketball games to train a model for egocentric trajectory prediction from a single image [3, 4].

Graduate Research Assistant

May 2016 - Oct. 2016

- Adviser: Prof. Kostas Daniilidis
- Helped develop an algorithm to robustly estimate 6-DoF object pose from a single RGB image of the object [2].

PUBLICATIONS

- [7] **A. Chan**, B. Long*, J. Xu*, S. Sanyal, T. Gupta, X. Ren, “SalKG: Learning From Knowledge Graph Explanations for Commonsense Reasoning,” *XAI Workshop @ International Conference on Machine Learning (ICML)*, 2021.
- [6] J. Yan, M. Raman, **A. Chan**, T. Zhang, R. Rossi, H. Zhao, S. Kim, N. Lipka, X. Ren, “Learning Contextualized Knowledge Structures for Commonsense Reasoning,” *Findings of the Annual Meeting of the Association for Computational Linguistics (ACL)*, 2021.
- [5] M. Raman, **A. Chan***, S. Agarwal*, P. Wang, H. Wang, S. Kim, R. Rossi, H. Zhao, N. Lipka, X. Ren, “Learning to Deceive Knowledge Graph Augmented Models via Targeted Perturbation,” *Proc. International Conference on Learning Representations (ICLR)*, 2021.
- [4] G. Bertasius, **A. Chan**, and J. Shi, “Egocentric Basketball Motion Planning from a Single First-Person Image,” *Proc. IEEE International Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018.
- [3] G. Bertasius, **A. Chan**, and J. Shi, “Learning an Egocentric Basketball Ghosting Model using Wearable Cameras and Deep Convolutional Networks,” *MIT Sloan Sports Analytics Conference (SSAC)*, 2018.
- [2] G. Pavlakos, X. Zhou, **A. Chan**, K. Derpanis, and K. Daniilidis, “6-DoF Object Pose from Semantic Keypoints,” *Proc. IEEE International Conference on Robotics and Automation (ICRA)*, 2017.
- [1] G. Salem, J. Krynitsky, B. Kirkland, E. Lin, **A. Chan**, S. Anfinrud, S. Anderson, M. Garmendia-Cedillos, R. Belayachi, J. Alonso-Cruz, J. Yu, A. Iano-Fletcher, G. Dold, T. Talbot, A. Kravitz, J. Mitchell, G. Wu, J. Dennis, M. Hayes, K. Branson, and T. Pohida, “Scalable Vision System for Mouse Homecage Ethology,” *Proc. Advanced Concepts for Intelligent Vision Systems (ACIVS)*, 2016.

* Equal contribution.

MENTORING

Mrigank Raman, Undergrad at IIT Delhi [5, 6]

Boyuan Long, Undergrad at USC [7]

Jiashu Xu, Undergrad at USC [7]

Tanishq Gupta, Undergrad at IIT Delhi [7]

SKILLS

Programming Languages: Python, MATLAB

ML/NLP Libraries: PyTorch, Hugging Face, Fairseq, PyTorch Lightning, scikit-learn

Data Analysis Libraries: NumPy, pandas, Matplotlib

Other Tools: VSCode, GitHub, Neptune, tqdm, tmux, mosh, htop, vim