

Aaron Chan

CONTACT INFORMATION

Website: aarzchan.com
Email: chanaaro@usc.edu

RESEARCH INTERESTS

machine learning (ML), natural language processing (NLP),
model explainability, explanation-based learning

EDUCATION

University of Southern California, Los Angeles, CA

Doctor of Philosophy (PhD), Computer Science

Aug 2017 - Present

- Adviser: Prof. Xiang Ren

University of Pennsylvania, Philadelphia, PA

Master of Science in Engineering (MSE), Robotics

Aug 2015 - May 2017

University of Maryland, College Park, College Park, MD

Bachelor of Science (BS), Electrical Engineering

Aug 2011 - May 2015

EXPERIENCE

Meta AI, Menlo Park, CA

Research Intern, AI Integrity

Sep 2021 - Present

- Managers: Maziar Sanjabi, Hamed Firooz
- Proposed a unified learning framework for rationale extraction, enabling end-to-end customization of the rationale extractor training process [8].

University of Southern California, Los Angeles, CA

Graduate Teaching Assistant

Jan 2022 - Present

- CSCI 566: Deep Learning and its Applications
- Instructor: Prof. Xiang Ren

Graduate Research Assistant

Aug 2017 - Present

- Intelligence and Knowledge Discovery (INK) Research Lab
- Adviser: Prof. Xiang Ren
- Proposed a method to improve commonsense QA performance by learning from knowledge graph saliency explanations [7].
- Proposed a commonsense reasoning model that jointly reasons over extracted and generated facts, in order to address fact sparsity in knowledge graphs [6].
- Analyzed the robustness of knowledge graph augmented models to various forms of knowledge graph perturbation [5].

Graduate Teaching Assistant

Sep 2020 - Dec 2020

- CSCI 100xg: Explorations in Computing
- Instructor: Prof. Saty Raghavachary

Google, Mountain View, CA

Hardware Engineering Intern, Android Camera

May 2017 - Aug 2017

- Manager: 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

- [8] **A. Chan**, M. Sanjabi, L. Mathias, L. Tan, S. Nie, X. Peng, X. Ren, H. Firooz. UniREx: A Unified Learning Framework for Language Model Rationale Extraction. *arXiv:2112.08802*, 2021.
- [7] **A. Chan**, J. Xu*, B. Long*, S. Sanyal, T. Gupta, X. Ren. SalKG: Learning From Knowledge Graph Explanations for Commonsense Reasoning. *Proc. Advances in Neural Information Processing Systems (NeurIPS)*, 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**, J. Shi. Egocentric Basketball Motion Planning from a Single First-Person Image. *Proc. Conference on Computer Vision and Pattern Recognition (CVPR)*, 2018.
- [3] G. Bertasius, **A. Chan**, 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, K. Daniilidis. 6-DoF Object Pose from Semantic Keypoints. *Proc. 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, T. Pohida. Scalable Vision System for Mouse Homeage Ethology. *Proc. Advanced Concepts for Intelligent Vision Systems (ACIVS)*, 2016.

* Equal contribution.

MENTORING

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

Jiashu Xu, Undergraduate at USC [7]

Boyuan Long, Undergraduate at USC [7]

Tanishq Gupta, Undergraduate at IIT Delhi [7]

Siba Smarak Panigrahi, Undergraduate at IIT Kharagpur

Wyatt Lake, High School Student at Harvard-Westlake

SKILLS

Programming Languages: Python

ML Libraries: PyTorch, PyTorch Lightning, Captum, Scikit-learn

NLP Libraries Hugging Face Transformers, Hugging Face Datasets

Data Analysis Libraries: NumPy, Pandas, Matplotlib, Seaborn

Other Tools: VSCode, GitHub, Neptune, Hydra