

# AN YAN

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## 🎓 EDUCATION

<b>University of California, San Diego</b>	La Jolla, CA
Ph.D. in Computer Science	2020 – 2024
M.S. in Computer Science	2018 – 2020
Advisor: Julian McAuley	
<b>University of Science and Technology of China</b>	Hefei, China
B.E. in Electronic Engineering and Information Science	2014 – 2018

## ⚙️ TECH SKILLS

- **Programming Languages:** Python, C, SQL, MATLAB, Haskell
- **Tools & Frameworks:** PyTorch, HuggingFace, PySpark, Hive, Azure, AWS, Distributed training, Linux

## 👤 INDUSTRY EXPERIENCE

<b>Research Intern at Microsoft</b> , Redmond, WA	Sep. 2023 – Present
Hosts: Zhengyuan Yang, Jianfeng Wang, Linjie Li, Kevin Lin, Zicheng Liu, Lijuan Wang	
<ul style="list-style-type: none"><li>• Training, evaluation and understanding of Large Vision-Language Models.</li><li>• Working on new applications with GPT-4V.</li></ul>	
<b>Research Intern at Adobe</b> , San Jose, CA	June. 2023 – Sep. 2023
Hosts: Raghav Addanki, David Arbour, Zhao Song, Tong Yu	
<ul style="list-style-type: none"><li>• Gradient-based Constrained sampling from LMs (GPT-2, Flan-T5, Llama) to optimize user engagement.</li><li>• Proposed a method to generate new promotion text with 15% user score improvement over state-of-the-arts.</li></ul>	
<b>Research Intern at Meta</b> , Menlo Park, CA	June. 2022 – Sep. 2022
Hosts: Cem Akkaya, Licheng Yu, Charlie Zhu, Yang Bai	
<ul style="list-style-type: none"><li>• Multi-modal pre-training for ads understanding and generation, on 50+ million ads from Facebook &amp; IG.</li><li>• Prototyped an extract-and-generate framework to customize BART to generate template ads for advertisers.</li></ul>	
<b>Applied Scientist Intern at Amazon</b> , Seattle, WA	June. 2021 – Sep. 2021
Hosts: Chaosheng Dong, Yan Gao, Jinmiao Fu, Tong Zhao	
<ul style="list-style-type: none"><li>• Personalized complementary recommendation. Built a transformer and GNN framework with contrastive augmentation for user modeling and recommendation. 25% relative improvement on hit rate over baselines.</li><li>• Paper at WWW-2022. Top 10 most viewed publications of 2022 at Amazon Science: <a href="https://www.amazon.science/latest-news/the-most-viewed-amazon-science-publications-of-2022">https://www.amazon.science/latest-news/the-most-viewed-amazon-science-publications-of-2022</a></li></ul>	
<b>Applied Scientist Intern at Amazon</b> , Santa Barbara, CA	June. 2020 – Sep. 2020
Hosts: Craig Bennett, Nic Jedema	
<ul style="list-style-type: none"><li>• Question-Answering quality evaluation. Collected and cleaned 1 million internal QA pairs via Spark.</li><li>• Finetuned BERT models for evaluating QA quality at Alexa.</li></ul>	

## ⚙️ SELECTED PROJECTS

### Complex Contextual Recommendation

- Collaboration with Google Deepmind. Proposed a new task for LLMs & Recommendation. Generating datasets by prompting ChatGPT. Training LM adapters for item retrieval.

## **Robust and Interpretable Visual Understanding via Natural Language**

- Proposed a new paradigm for visual recognition via pruned attributes generated from LLMs.
- Published one paper at ICCV-2023 & Submitted one paper to Neurips-2023 workshop.

## **Personalized Multi-modal Explanation Generation for Recommendation**

- Collected a large scale web image-text dataset on google local. Proposed a new task and visual-GPT framework for generating personalized multi-modal explanations for recommendation. Paper at SIGIR-2023.

## **Language Models for Clinical NLP**

- Finetuning Language Models for Clinical NLP. Built popular Medical LMs (RadBERT) on HuggingFace with 1K downloads per month and 100K+ peak monthly downloads. Paper at Journal of Radiology.

## **PUBLICATIONS**

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*Preprints & Under submission:*

### **Driving through the Concept Gridlock: Unraveling Explainability Bottlenecks in Automated Driving**

- Jessica Echterhoff, **An Yan**, Kyungtae Han, Amr Abdelraouf, Rohit Gupta, Julian McAuley

### **Mitigating Spurious Correlations for Medical Image Classification via Natural Language Concepts**

- **An Yan**, Yu Wang, Petros Karypis, Zexue He, Amilcare Gentili, Chun-Nan Hsu, Julian McAuley

### **CLIP also Understands Text: Prompting CLIP for Phrase Understanding**

- **An Yan**, Jiacheng Li, Wanrong Zhu, Yujie Lu, William Yang Wang, Julian McAuley

*Refereed Publications:*

### **M4: A Multi-Level, Multi-Task, and Multi-Domain Medical Benchmark for Language Model Evaluation**

- Zexue He, Yu Wang, **An Yan**, Yao Liu, Eric Y Chang, Amilcare Gentili, Julian McAuley, Chun-Nan Hsu
- Empirical Methods in Natural Language Processing (**EMNLP-2023**)

### **Learning Concise and Descriptive Attributes for Visual Recognition**

- **An Yan**, Yu Wang, Yiwu Zhong, Chengyu Dong, Zexue He, Yujie Lu, William Wang, Jingbo Shang, Julian McAuley
- International Conference on Computer Vision 2023 (**ICCV-2023**)

### **Personalized Showcases: Generating Multi-Modal Explanations for Recommendations**

- **An Yan**, Zhankui He, Jiacheng Li, Tianyang Zhang, Julian McAuley
- The International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR-2023**)

### **Visualize Before You Write: Imagination-Guided Open-Ended Text Generation**

- Wanrong Zhu, **An Yan**, Yujie Lu, Wenda Xu, Xin Eric Wang, Miguel Eckstein, William Yang Wang
- European Chapter of the Association for Computational Linguistics (**EACL-2023**)

### **ImagineE: An Imagination-Based Automatic Evaluation Metric for Natural Language Generation**

- Wanrong Zhu, Xin Wang, **An Yan**, Miguel Eckstein, William Wang
- European Chapter of the Association for Computational Linguistics (**EACL-2023**)

### **Disambiguating Medical Reports via Contrastive Knowledge Infusion**

- Zexue He, **An Yan**, Amilcare Gentili, Julian McAuley, Chun-Nan Hsu
- AAAI Conference on Artificial Intelligence (**AAAI-2023**)

### **Robust multi-view fracture detection in the presence of other abnormalities using HAMIL-Net**

- Xing Lu, Eric Chang, Jiang Du, **An Yan**, Julian McAuley, Amilcare Gentili, Chun-Nan Hsu
- Military Medicine, 2023

### **RadBERT: Adapting Language Models to Radiology**

- **An Yan**, Chun-Nan Hsu, Amilcare Gentili, Julian McAuley
- Journal of Radiology: Artificial Intelligence, 2022

### **Personalized Complementary Product Recommendation**

- **An Yan**, Yan Gao, Chaosheng Dong, Jinmiao Fu, Tong Zhao, Yi Sun, Julian McAuley
- The ACM Web Conference (**WWW-2022**)

## **Semi-supervised Multi-Label Classification with 3D CBAM Resnet for Tuberculosis Cavern Report**

- Xing Lu, **An Yan**, Eric Y Chang, Chun-nan Hsu, Julian McAuley, Jiang Du, Amilcare Gentili
- Conference and Labs of the Evaluation Forum (**CLEF-2022**)

## **Weakly Supervised Contrastive Learning for Chest X-Ray Report Generation**

- **An Yan**, Zexue He, Xing Lu, Jiang Du, Eric Chang, Amilcare Gentili, Julian McAuley, Chun-Nan Hsu
- Empirical Methods in Natural Language Processing (**EMNLP-2021**), Findings

## **Describing Visual Differences Needs Semantic Understanding of Individuals**

- **An Yan**, Xin Wang, Tsu-Jui Fu, William Wang
- European Chapter of the Association for Computational Linguistics (**EACL-2021**)

## **Multimodal Style Transfer Learning for Outdoor Vision-and-Language Navigation**

- Wanrong Zhu, Xin Wang, Tsu-Jui Fu, **An Yan**, Pradyumna Narayana, Kazoo Sone, Sugato Basu, William Wang
- European Chapter of the Association for Computational Linguistics (**EACL-2021**)

## **2D Convolutional Neural Networks for Sequential Recommendation**

- **An Yan**, Shuo Cheng, Wang-Cheng Kang, Mengting Wan, Julian McAuley
- ACM International Conference on Information and Knowledge Management (**CIKM-2019**)

## **PA3D: Pose-Action 3D Machine for Video Recognition**

- **An Yan**, Yali Wang, Zhifeng Li, Yu Qiao
- IEEE Conference on Computer Vision and Pattern Recognition (**CVPR-2019**)

## **ACADEMIC EXPERIENCE**

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### **Research Assistant at UC San Diego, La Jolla, CA**

2018 – Present

Advisor: Prof. Julian McAuley

- Vision and Language.
- Personalization and Recommendation. (w/ Toyota, Google Deepmind)

### **Visiting Student at UC Santa Barbara, Goleta, CA**

June. 2019 – June. 2020

Advisor: Prof. William Wang

- Vision-Language Navigation ( w/ ByteDance AI Lab, Google research)
- Image Captioning, Visual Machine Translation.

### **Visiting Student at Chinese Academy of Sciences, Shenzhen, China**

Mar. 2018 – Aug. 2018

Advisor: Prof. Yu Qiao

- Human Action understanding, Human Pose Estimation. ( w/ Tencent AI Lab )

### **Research Assistant at USTC, Hefei, China**

Sep. 2016 – Jan. 2018

Advisors: Prof. Cong Shen, Prof. Weiping Li

- Reinforcement Learning, Multi-Armed Bandit Problem.

## **PROFESSIONAL SERVICES**

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- Reviewer & PC member: NeurIPS, ICLR, ACL, CIKM, EMNLP, AAAI, RecSys, WWW, WSDM, MLHC, EACL, ACL Rolling Review
- Senior PC member: AAAI-2023, AAAI-2024
- Session Chair: WWW-2022