YUN CHENG WANG

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University of Southern California, University Park Campus
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EDUCATION

University of Southern California Jan. 2021 - Present
Ph.D. in Electrical and Computer Engineering Los Angeles, CA
Advisor: Professor C.-C. Jay Kuo

University of Southern California Aug. 2018 - Dec. 2019
M.S. in Electrical and Computer Engineering, GPA: 4.0/4.0 Los Angeles, CA

National Taiwan University Sep. 2014 - Jun. 2018
B.S. in Electrical Engineering, GPA: 3.8/4.3 Taipei, Taiwan

RESEARCH INTERESTS

Knowledge acquisition, Data discovery, Knowledge graph completion, Machine learning on graphs, Representation learning, Lightweight and efficient machine learning models, Image quality assessment

PUBLICATIONS

[1] **Yun-Cheng Wang**, Xiou Ge, Bin Wang, C.-C. Jay Kuo, "GreenKGC: A Lightweight Knowledge Graph Completion Method", *Under Review.*

[2] Xiou Ge, **Yun-Cheng Wang**, Bin Wang, C.-C. Jay Kuo, "CompoundE: Knowledge Graph Embedding with Translation, Rotation and Scaling Compound Operations", *Under Review.*

[3] Zhanxuan Mei, **Yun-Cheng Wang**, Xingze He, C-C Jay Kuo, "GreenBIQA: A Lightweight Blind Image Quality Assessment Method", *IEEE MMSP, 2022.*

[4] Xiou Ge, **Yun-Cheng Wang**, Bin Wang, C.-C. Jay Kuo, "TypeEA: Type-Associated Embedding for Knowledge Graph Entity Alignment", *Under Review.*

[5] Xiou Ge, **Yun-Cheng Wang**, Bin Wang, C.-C. Jay Kuo, "CORE: A knowledge graph entity type prediction method via complex space regression and embedding", *Pattern Recognition Letter, 2022.*

[6] **Yun-Cheng Wang**, Xiou Ge, Bin Wang, C.-C. Jay Kuo, "KGBoost: A Classification-Based Knowledge Base Completion Method with Negative Sampling", *Pattern Recognition Letter, 2022.*

[7] Bin Wang, Fenxiao Chen, **Yun-Cheng Wang**, C.-C. Jay Kuo, "Efficient Sentence Embedding via Semantic Subspace Analysis", *International Conference on Pattern Recognition (ICPR), 2020.*

[8] Fenxiao Chen, **Yun-Cheng Wang**, Bin Wang, C.-C. Jay Kuo, "Graph representation learning: A survey", *APSIPA Transactions on Signal and Information Processing, 2020.*

[9] Bin Wang, Angela Wang, Fenxiao Chen, **Yun-Cheng Wang**, C.-C. Jay Kuo, "Evaluating word embedding models: Methods and experimental results", *APSIPA Transactions on Signal and Information Processing, 2019.*

INVITED TALKS, TEACHINGS, AND PROFESSIONAL SERVICES

- Reviewer - IEEE/ACM TASLP (Journal), ECML-PKDD 2022 (Conference).
- Invited talk - "Machine Learning on Knowledge Graphs" at NTNU, Taiwan, Sep. 2020
- Course mentor - USC EE503: Probability for Electrical and Computer Engineer, Fall 2019

EXPERIENCES

USC Media Communication Lab (MCL) Aug. 2021 - Present
Research Assistant Los Angeles, CA

- Collaborate with Meta to develop a blind image/video quality assessment method with small model size and real-time predictions.
- Achieve state-of-the-art results on synthetic image quality assessment datasets with a much smaller model size.

Academia Sinica Sep. 2020 - Dec. 2020
Research Assistant Taipei, Taiwan

- Work on a NLP research project to learn word embeddings for Chinese without ambiguity.
- Leverage the taxonomy and concepts in E-HowNet, a Chinese lexical knowledge base, to learn word embeddings from semantic graphs.

Taboola Inc. Jun. 2019 - Aug. 2019
Research Intern Los Angeles, CA

- Responsible for building a large-scale knowledge graph for discovering trending topics.
- 5,000 news articles from multiple publishers will be injected to the knowledge graphs on a daily basis and can be finished within an hour.
- The main challenges include deduplication of entities, incrementally updating the knowledge base, and building an automation pipeline from the sources to the products.

SELECTED PROJECTS

Knowledge Graph for Music Recommendation December 2021

- Final project for the course DSCI558: Building Knowledge Graphs.
- The project covers web crawling to acquire data, knowledge graph construction, entity linking, knowledge graph database, and development of recommendation system.
- The knowledge graph contains song tracks, albums, artists, genres, and lyrics and is used to recommend music based on the user inputs, such as song tracks, genres, or keywords.

YouTube Video Retrieval System March 2019

- A project accomplished by 4 USC master students from different backgrounds in LA Hacks, 2019.
- Develop a YouTube video retrieval system that is able to search for the specific object or key phrases in the videos.

Drama Storyteller July 2018

- Collaboration between KKTV and MPAC lab at NTU on video understanding.
- Identify the storylines in the dramas with machine learning models and extract video thumbnails for the dramas.
- Subjective tests are conducted. The results are presented in front of over 50 data scientists in an annual company meeting.