Tsung-Shan (Kevin) Yang

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Education

University of Southern California (USC) **Aug 2022 - present**
Ph.D. *in the Department of Electrical Computer Engineering* *California, USA*

National Taiwan University (NTU) **Sep 2019 - Sep 2021**
Master of Science *in Graduate Institute of Communications Engineering* *Taipei, Taiwan*
· GPA: 4.04 / 4.30

National Taiwan University (NTU) **Sep 2014 - Jun 2019**
Bachelor of Science *degree in the Department of Chemistry* *Taipei, Taiwan*
Bachelor of Science *in Engineering degree in the Department of Electrical Engineering* *Taipei, Taiwan*
· GPA: 3.81 / 4.30

Selected Publications

1. GHOI: A Green Human-Object-Interaction Detector
Tsung-Shan Yang, Yun-Cheng Wang, Chengwei Wei, C.-C. Jay Kuo
IEEE International Conference on Multimedia Information Processing and Retrieval (MIPR), 2024
· Green Learning solution for HOI detection and reduce the number of FLOPs to 1/14,500 compared to SOTAs

2. BPQA: A Blind Point Cloud Quality Assessment Method
Qingyang Zhou, Aolin Feng, **Tsung-Shan Yang**, Shan Liu, C.-C. Jay Kuo
IEEE International Conference on Image Processing Challenges and Workshops (ICIPCW), 2023
· Achieve the second-best score on the challenge with an interpretable and small learning scheme

3. Viewing Bias Matters in 360 Videos Visual Saliency Prediction
Peng-Wen Chen, **Tsung-Shan Yang**, Gi-Luen Huang, Chia-Wen Huang, Yu-Chieh Chao, Chien-Hung Lu, Pei-Yuan Wu
IEEE Access Journal paper, 2023
· Statistically analyze the human bias in saliency maps and generalize the spherical kernel to time series data

4. NTIRE 2020 Challenge on NonHomogeneous Dehazing
IEEE Computer Vision and Pattern Recognition Workshop (CVPRW), 2020
· Propose an attention refinement block of the deep learning model

5. Few Shot Learning With Difficult Settings
Yen-Ting Liu, Guan-Shiuan Kuo, **Tsung-Shan Yang**, Po-Chun Hsu, Chiou-Shann Fuh
The 31st IPPR Conference on Computer Vision, Graphic and Image Processing (CVGIP), 2018
· Analyze the different approaches to few-shot learning

6. IR Drop Prediction of ECO-Revised Circuits Using Machine Learning
Shih-Yao Lin, Yen-Chun Fang, Yu-Ching Li, Yu-Cheng Liu, ***Tsung-Shan Yang****, Shang-Chien Lin, Chien-Mo Li, Eric Jia-Wei Fang*
IEEE International Conference about very-large-scale integration testing and symposium (VTS), 2018
· Reduce 30X simulation time through deep learning

Awards / Scholarship

Taiwan USC Scholarship **2022**
Ministry of Education in Taiwan
· four-year full funding

Viterbi School of Engineering / Graduate School Fellowship **2022**
University of Southern California
· one-year fellowship for Ph.D. student

Dean's List **2014 Fall & 2015 Spring**
Department of Chemistry at NTU
· Awarded to the top 5% of students in the class

Gold Medal in 8th International Junior Science Olympiad (IJSO) **2011**
International individual and team competition in the Natural Sciences

Research

USC - MediaComm Lab **Aug 2022 - Now**
Ph.D. student in the Department of Electrical Engineering
Advisor: Prof. **C.-C. Jay Kuo**
· Green Learning in Human-Object Interaction Detection
· Green Learning in Multimodal Alignment

NTU - Machine Learning and Estimation Theory Lab **Jul 2019 - Sep 2021**
M.S. student in the Graduate Institute of Communications Engineering
Advisor: Prof. **Pei-Yuan Wu**
· Omnidirectional Image Encoding
· Propose a feature extraction method on panoramic images

NTU - Yuan-Chung Cheng's Research Group **Jun 2017 - Feb 2019**
Undergraduate Student in the Department of Chemistry
Advisor: Prof. **Yuan-Chung Cheng**
· 2D spectrum analysis about coupling excited molecules
· Show ability to conduct an interdisciplinary project about machine learning and spectroscopy

Teaching Experiences

USC - Systems for Machine Learning **2023 Spring**
· Introduce the hardware of TPUs and GPUs
· Design the project about finetuning LLMs

NTU - Machine Learning **2019 Fall & 2020 Fall**
· Design assignments about theoretical analysis and deep learning projects
· Maintain the course website

NTU - Data Structure **2020 Spring**
· Design assignments about theoretical analysis and data structure implementation

NTU - General Chemistry **2018 Fall**
· Lead group discussions and provide hints on assignments
· Provide two-hour TA classes each week for over 300 students

Skills

· ***Software****: Python / C++ / HTML / MATLAB / C / JavaScript*

· **Strength**: Computer Vision / Deep Learning / Algorithm Design / Physical Chemistry / Quantum Chemistry

· **Languages**: English as a Second Language / Native Mandarin Speaker

· **Tools:** PyTorch / OpenCV / Tensorflow / Keras / Scikit-Learn

· **Projects can be viewed on my GitHub**: https://github.com/keevin60907