Yen-Yu Chang

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Research Interests

Deep Learning, Computer Vision, and Computer Graphics

My research interests lie in the general area of machine learning, particularly in deep learning, computer vision, and computer graphics, as well as their applications in object-centric learning, multimodal learning, and neural rendering.

Education

Stanford University — *Sep.2019 - Jun.2021*, *Stanford, California*

Master of Science

- Major: Electrical Engineering
- Cumulative GPA: 4.00/4.00

National Taiwan University (NTU) — *Sep. 2014 - Jun. 2018*, *Taipei, Taiwan*

Bachelor of Science in Engineering

- Major: Electrical Engineering
- Cumulative GPA: 3.86/4.00, Major GPA: 3.87/4.00, CS-Related GPA: 3.95/4.00

Publications

Learning Object-Centric Neural Scattering Functions for Free-Viewpoint Relighting and Scene Composition

Michelle Guo*, Koven Yu*, Alireza Fathi, Yen-Yu Chang, Eric Ryan Chan, Ruohan Gao, Thomas Funkhouser, Jiajun Wu

Under review

Point2Cyl: Reverse Engineering 3D Objects – from Point Clouds to Extrusion Cylinders

Mikaela Uy*, Yen-Yu Chang*, Minhyuk Sung, Purvi Goel, Joseph Lambourne, Tolga Birdal, Leonidas Guibas

Under review

ObjectFolder 2.0: A Multisensory Object Dataset for Sim2Real Transfer

Ruohan Gao*, Zilin Si*, Yen-Yu Chang*, Samuel Clarke, Jeannette Bohg, Li Fei-Fei, Wenzhen Yuan, Jiajun Wu

Under review

ObjectFolder: A Dataset of Objects with Implicit Visual, Auditory, and Tactile Representations | Link — *May. 2021*

Ruohan Gao, Yen-Yu Chang*, Shivani Mall*, Li Fei-Fei, Jiajun Wu

Published in The Conference on Robot Learning 2021 (CoRL 2021) — *London, UK*

Inductive Representation Learning in Temporal Networks via Causal Anonymous Walks | Link — *May. 2021*

Yanbang Wang, Yen-Yu Chang, Yunyu Liu, Pan Li, and Jure Leskovec

Published in The 9'th International Conference on Learning Representations (ICLR 2021) — *Virtual*

F-FADE: Frequency Factorization for Anomaly Detection in Edge Streams | Link — *Mar. 2021*

Yen-Yu Chang, Pan Li, Rok Sosic, Mohamed Ibrahim, Marco Schweighauser, and Jure Leskovec

Published in The 14'th ACM International Conference on Web Search and Data Mining (WSDM-2021) — *Virtual*

A Regulation Enforcement Solution for Multi-agent Reinforcement Learning | Link — *May. 2019*

Fan-Yun Sun, Yen-Yu Chang, Yueh-Hua Wu, and Shou-De Lin

Published in 2019 International Conference on Autonomous Agents and Multiagent Systems (AAMAS-19) — *Montreal, Canada*

Designing Non-greedy Reinforcement Learning Agents with Diminishing Reward Shaping | Link — *Feb. 2018*

Fan-Yun Sun, Yen-Yu Chang, Yueh-Hua Wu, and Shou-De Lin

Published in 2018 AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES-18) — *New Orleans, USA*

ANS: Adaptive Network Scaling for Deep Rectifier Reinforcement Learning Models | Link

Yueh-Hua Wu, Fan-Yun Sun, Yen-Yu Chang, and Shou-De Lin

Preprint

A Memory-Network Based for Multivariate Time-Series Forecasting | Link
Yen-Yu Chang, Fan-Yun Sun, Yueh-Hua Wu, and Shou-De Lin
Preprint

Research Experiences

Research Assistant, instructed by Prof. Jiajun Wu, Prof. Fei-Fei Li, & Dr. Ruohan Gao — *Feb. 2021 - Present*
Stanford Vision and Learning Lab (SVL) — *Stanford, California*
- Researched on multimodal learning and embodied learning with multiple modalities.
- Published the paper **"ObjectFolder: A Dataset of Objects with Implicit Visual, Auditory, and Tactile Representations"** to **CoRL-21**.
- Submitted the paper **"ObjectFolder 2.0: A Multisensory Object Dataset for Sim2Real Transfer"**.

Graduate Researcher, instructed by Prof. Leonidas Guibas — *Feb. 2021 - Aug. 2021*
Stanford Geometric Computation Group — *Stanford, California*
- Researched on deep learning and 3D computer vision.
- Submitted the paper **"Point2Cyl: Reverse Engineering 3D Objects – from Point Clouds to Extrusion Cylinders"**.

Research Assistant, instructed by Prof. Jure Leskovec & Prof. Pan Li — *Jul. 2019 - Jan. 2021*
Stanford Network Analysis Project (SNAP) — *Stanford, California*
- Researched on dynamic graph representation learning, with focus on node classification and link prediction and published the paper **"Inductive Representation Learning in Temporal Networks via Causal Anonymous Walks"** to **ICLR-21**
- Researched on data mining and social network analysis, with focus on anomaly detection and published the paper **"F-FADE: Frequency Factorization for Anomaly Detection in Edge Streams"** to **WSDM-21**.

Undergraduate Researcher, instructed by Prof. Hung-Yi Lee & Prof. Lin-Shan Lee — *Feb. 2017 - Jun. 2018*
Speech Processing and Machine Learning Laboratory, Department of Electrical Engineering, NTU — *Taipei, Taiwan*
- Researched on natural language processing, with focus on visual question answering.

Undergraduate Researcher, instructed by Prof. Shou-de Lin — *Jul. 2016 - Jun. 2018*
Machine Discovery and Social Network Mining Laboratory, Department of Computer Science and Information Engineering, NTU — *Taipei, Taiwan*
- Researched on reinforcement learning and multi-agent system, with focus on collaborative and ethics behaviors and published the paper **"Designing Non-greedy Reinforcement Learning Agents with Diminishing Reward Shaping"** to **AIES-19**.
- Researched on reinforcement learning and multi-agent system, with focus on learning agent-to-agent interaction and published the paper **"A Regulation Enforcement Solution for Multi-agent Reinforcement Learning"** as the extended abstract to **AAMAS 2019**.
- Participated in **KDD Cup 2018** and achieved **19th place** in main prize and **4th place** in special prize.

Undergraduate Researcher, instructed by Prof. Ho-Lin Chen — *Jul. 2015 - Jul. 2017*
Game Theory and Molecular Computing Laboratory, Department of Electrical Engineering, NTU — *Taipei, Taiwan*
- Researched on game theory, with focus on network creation games and price of anarchy (PoA).
- Proved the upper bound of PoA for all Heterogeneous Star Celebrity Games. Link

Selected Projects

Dynamic Graph networks for anomalous behavior detection in social network system — *Sep. 2019 - Dec. 2020*
for Stanford Network Analysis Project
- Design new dynamic graph network to model higher-order dependencies between nodes
- Analyze anomalous behaviors in social network systems

Long-term Air Quality Forecasting — *Mar. 2018 - Jun. 2018*
for CSIE7433 (Machine Learning: Theory and Practice)
- Built a recurrent neural network model to forecast air quality in future 48 hours and applied forecast weather data in our RNN.
- **19th place** in KDD Cup 2018 and **4th place** in KDD Cup 2018 special prize

Honors & Awards

International

2018 **19th Place (out of 4180 teams)**, KDD Cup 2018 — *London, U.K.*
2018 **4th Place (out of 4180 teams)**, KDD Cup 2018 Special Prize — *London, U.K.*

Domestic

2016 **Dean's List**, GPA in top 5% in Department of Electrical Engineering, NTU — *Taipei, Taiwan*

Skills

Languages	Python, C/C++, Shell scripting, Matlab
Libraries/Tools	Keras, Tensorflow, Pytorch
OS	GNU/Linux (Ubuntu & Arch Linux), Mac OSX
Other	Git, LaTeX