Yingtian Tang

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Education Background

University of Pennsylvania **Philadelphia, USA**

- Master of Science in Engineering in Computer and Information Science *09/2021 -- present*

- **Overall GPA: 4.00 / 4.00**
- **Featured Courses:** Foundation of Deep Learning; Convex Optimization; Theory of Machine Learning; Theoretical Neuroscience; Machine Perception; Hardware-Software Co-design for Machine Learning.

University of Electronic Science and Technology of China (UESTC, 985&211) **Chengdu, China**

- Enrolled in Yingcai Honors College (Top 100 students enrolled) *09/2016 -- 06/2020*

- Bachelor of Engineering in Computer Science and Technology
- **Overall GPA: 3.90 / 4.00**

University of Pennsylvania **Philadelphia, USA**

- Visiting Program *09/2018 -- 01/2019*

- **Overall GPA: 4.00 / 4.00**

Research Interests

- Artificial Intelligence, Computational Cognitive Neuroscience
- Computer Vision, Representation Learning, Active Perception

Publications

- **Tang, Y.**, Liu, J., Zhou, C., & Li, T. (2022). Online Motion Style Transfer for Interactive Character Control. *arXiv preprint* arXiv:2203.16393.
- Li, R., **Tang, Y.**, Shi, Q., Mao, H., Chen, L., Jin, J., ... & Cheng, Z. (2022, March). Accurate probabilistic miss ratio curve approximation for adaptive cache allocation in block storage systems. In *2022 Design, Automation & Test in Europe Conference & Exhibition (DATE)* (pp. 1197-1202).
- **Yingtian Tang**, Han Lu, Xijun Li, Lei Chen, Mingxuan Yuan and Jia Zeng, "Learning-Aided Heuristics Design for Storage System", *The 2021 ACM SIGMOD/PODS International Conference on Management of Data*.
- Lin Shan, Fu Long Tan, Chen Hongyu, Kuan Yang Tang, **Yingtian Tang**, Nemath Ahmed, and Alex C. Kot. "Visual Analytic System for Pandemic Management During COVID-19". Winner of the *IEEE 5-Minute Video Clip Contest (5-MICC), IEEE Signal Processing Magazine* (vol. 38, pp. 138-140).

- **Yingtian Tang**, Yong Deng. "Time series prediction based on visibility graph with node similarity and slope". In *International Journal of Computers Communications & Control*.

Research Experience

GRASP Lab, UPenn

05/2022 -- present

- Active Scene Understanding | Supervised by Prof. Pratik Chaudhari

- Study how action facilitates perception: how objects could arise from active unsupervised learning.
- Experiment in a 2D environment: use temporal slowness as a principle for unsupervised learning on the input sensory stream, while learn actions for generating the input stream. The learned system is able to actively explore the world and discriminate between objects.

Cognitive & Neural Computation Lab, Yale

08/2022 -- 11/2022

- Cognitive Studies on Deep Learning Models | Supervised by Prof. Ilker Yildirim

- Studied the robustness of object-centric models against common visual corruption.
- Tried to improve the spatial relation in the generated images of the Stable Diffusion.
- Investigated an interesting flaw of object representation in the large vision-language model CLIP. The results have been **submitted to *CVPR 2023***.

Robotics X, Tencent

02/2021 -- 08/2021

- ML for Character Motion Stylization in Games | Supervised by Dr. LI Tingguang

- Developed models for character motion generation with different styles. The models can generate online style transition and style interpolation.
- Studied the application of sequential models on motion generation tasks. The developed model avoids the problem of strong temporal dependency.
- Drafted a tutorial about motion stylization, covering paired and unpaired motion datasets, as well as online and offline stylization applications.

Noah's Ark Lab, Huawei

07/2020 -- 02/2021

- ML for Storage Workload Analysis, Research Intern | Supervised by Prof. ZENG Jia

- Analyzed I/O workloads and modeled the short-term/long-term workloads with a bi-level schema
- Designed an improved Hidden Markov Model-based approach for fast I/O trace regeneration
- My colleague and I jointly developed a new and very efficient method for estimating the miss-ratio curve, which has been **published on *DATE 2022***.
- Applied the deep reinforcement learning on the optimization of CPU utilization and energy usage. **This work has been accepted by *ACM SGIMOD 2021***.

Rapid-Rich Object Search (ROSE) Lab, Nanyang Technological University

09/2019 -- 03/2020

- Human Re-identification, Research Intern | Supervised by Prof. Kot Chichung, Alex

- Link to the project: [*https://rose.ntu.edu.sg/research/DeepLearningVideoAnalytics/Pages/personreid.aspx*]

- Designed a new algorithm to improve human re-identification in cross-domain applications
- Co-developed a real-time person re-id system, which was used for safety surveillance in NTU campus and geo-fencing in hospitals
- Developed an online annotation website for data collection and processing
- The research outputs have been applied to fight Covid-19 at the Security Operation Center in the Changi Exhibition Center in Singapore
- The trailer of our system "Visual Analytic System for Pandemic Management during COVID-19" has been selected **as the winner for the 5-Minute Video Clip Contest at *IEEE ICIP 2020***

Brain & Intelligence Lab, UESTC 03/2017 -- 06/2019

- School of Computer Science and Engineering, UESTC | Supervised by Prof. Shi Gu

- Analyzed fMRI data and generated brain networks via machine learning techniques
- Improved the functional connectivity by modeling the zero-delay auto-correlation of the noise
- Achieved gender classification by utilizing graph neural networks

The Property and Application of Complex Networks, UESTC 09/2017 -- 06/2019

- Institution of Fundamental and Frontier Sciences, UESTC | Supervised by Prof. Yong Deng

- Analyzed brain networks as complex networks and identified important nodes and structures
- Proposed a new method for predicting time series using visibility graph with improved performance. **This work has been accepted by *International Journal of Computers Communications & Control***

Professional Skills

English: **TOEFL:** 111 | **GRE:** 333+3.5

Programming: **Python** (Professional) | **Java** (Familiar) | **C / C++** (Familiar)

Honors & Awards

- Model Scholarships, by Yingcai Honors College of UESTC, 09/2017 & 09/2018 & 09/2019
- China College Students' Entrepreneurship Competition Excellence Award, 04/2018
- Excellent Student Award, by the School of Computer Science and Engineering, UESTC, 01/2019