HSIAO-YU FISH TUNG

Carnegie Mellon University ⋄ Machine Learning Department
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RESEARCH INTERESTS

Machine Common Sense, Computer Vision, Robotics, Graphics and Language

EDUCATION

Carnegie Mellon University, Pittsburgh, USA *September 2015-now*
PhD in Machine Learning, *Advisor: Prof. Katerina Fragkiadaki*
Overall GPA: 4.03
• Thesis Title: Learning Generalizable Visual Representation for Embodied Agents and through Embodied. (Committee Members: Katarina Fragkiadaki, Tom Mitchell, Chris Atkeson, Jitendra Malik)

Carnegie Mellon University, Pittsburgh, USA *August 2013-May 2015*
M.S. in Machine Learning, *Advisor: Prof. Alexander J. Smola*
Overall GPA: 4.0
• Master thesis: Spectral methods for nonparametric models.

National Taiwan University, Taipei, Taiwan *September 2009-June 2013*
B.S. in Electrical Engineering
Overall GPA: 3.95/4.0, Rank Top 9%

PUBLICATION

In Submission

[1] **Hsiao-Yu Fish Tung***, Xian Zhou*, Mihir Prabhudesai and Katerina Fragkiadaki, "3D-OES: View-Invariant Object-factorized Environment Simulators," under submission, 2020

[2] Mihir Prabhudesai*, Shamit Lal*, **Hsiao-Yu Fish Tung**, Adam W Harley, Shubhankar Potdar and Katerina Fragkiadaki, "3DQ-Nets: Learning 3D Vision without 3D Supervision using Pose Equivariant 3D Quantized Neural Scene Representations," under submission, 2020

Peer-Reviewed Conference Papers

[1] Mihir Prabhudesai*, **Hsiao-Yu Fish Tung***, Syed Ashar Javed*, Maximilian Sieb, Adam W. Harley and Katerina Fragkiadaki, "Embodied Language Grounding with 3D Visual Feature Representations," under submission, 2020.

[2] Adam W. Harley, Fangyu Li, Shrinidhi K. Lakshmikanth, Zian Zhou, **Hsiao-Yu Fish Tung**, and Katerina Fragkiadaki, "Visual Representation Learning with 3D View-Contrastive Inverse Graphics Networks," *International Conference on Learning Representations (ICLR), 2019*

[3] **Hsiao-Yu Fish Tung***, Ricson Cheng* and Katerina Fragkiadaki, "Learning Spatial Common Sense with Geometry-Aware Recurrent Networks," *Conference on Computer Vision and Pattern Recognition (CVPR), 2019.* (**Oral**)

[4] **Hsiao-Yu Fish Tung**, Adam W. Harley, Liang-Kang Huang and Katerina Fragkiadaki, "Reward Learning from Narrated Demonstrations," *Conference on Computer Vision and Pattern Recognition (CVPR), 2018.*

[5] **Hsiao-Yu Fish Tung**, Hsiao-Wei Tung, Ersin Yumer, and Katerina Fragkiadaki, "Self-supervised learning of motion capture," *Neural Information Processing Systems (NIPS), 2017.* (**Spotlight**)

[6] **Hsiao-Yu Fish Tung**, Adam Harley, William Seto, and Katerina Fragkiadaki, "Adversarial inverse graphics networks: Learning 2d-to-3d lifting andimage-to-image translation from unpaired supervision," *International Conference on Computer Vision (ICCV), 2017.*

[7] Dougal J. Sutherland, **Hsiao-Yu Tung**, Heiko Strathmann, Soumyajit De, Aaditya Ramdas, Alex Smola, and Arthur Gretton, "Generative models and model criticism via optimized maximum mean discrepancy.," *International Conference on Learning Representations (ICLR), 2017.*

[8] Yining Wang, **Hsiao-Yu Fish Tung**, Alexander J. Smola and Animashree Anandkumar, "Fast and guaranteed tensor decomposition via sketching.," *Neural Information Processing Systems (NIPS), 2015. (***Spotlight***)*

[9] **Hsiao-Yu Fish Tung** and Alexander J. Smola, "Spectral Methods for Indian Buffet Process Inference," *Neural Information Processing Systems (NIPS), 2014.*

[10] **Hsiao-Yu Tung***, Wei-Chiu Ma*, and Tian-Li Yu, "Novel Traffic Light Timing Adjustment Strategy Based On Genetic Algorithm," *IEEE Congress on Evolutionary Computation (IEEE CEC), 2014.*(**Oral**)

Journal Paper

[11] **Hsiao-Yu Fish Tung**, Chao-Yuan Wu, Manzil Zaheer, and Alexander J. Smola, "Spectral methods for nonparametric models," *CMU MLD Master Thesis. http://arxiv.org/abs/1704.00003*

[12] C.-L. Li, Y.-C. Su, T.-W. Lin, C.-H. Tsai, W.-C. Chang, K.-H. Huang, T.-M. Kuo, S.-W. Lin, Y.-S. Lin, Y.-C. Lu, C.-P. Yang, C.-X. Chang, W.-S. Chin, Y.-C. Juan, **H.-Y. Tung**, J.-P. Wang, C.-K. Wei, Felix Wu, T.-C. Yin, T. Yu, Y. Zhuang, S.-d. Lin, H.-T. Lin, and C.-J. Lin. "Combination of Feature Engineering and Ranking Models for Paper-Author Identification in KDD Cup 2013," *Journal of Machine Learning Research, 2015.*

[13] W.-S. Chin, Y.-C. Juan, Y.-Zhuang, Felix Wu, **H.-Y. Tung**, T. Yu, J.-P. Wang, C.-X. Chang, C.-P. Yang, W.-C. Chang, K.-H. Huang, T.-M. Kuo, S.-W. Lin, Y.-S. Lin, Y.-C. Lu, Y.-C. Su, C.-K. Wei, T.-C. Yin, C.-L. Li, T.-W. Lin, C.-H. Tsai, S.-d. Lin, H.-T. Lin, and C.-J. Lin. "Effective String Processing and Matching for Author Disambiguation," *Journal of Machine Learning Research, 2014.*

SELECTED TALKS

2020 Summer, Columbia University. Learning Geometry-Aware Visual Representations for Embodied Agents and through Embodied Agents

2020 Spring, NYU Human and Machine Learning Lab. Learning Geometry-Aware Visual Representations for Embodied Agents and through Embodied Agents

2019 Fall, MIT Computer Vision Group. Embodied Visual Recognition

2019 Summer, Oculus Reality Lab. Embodied Visual Recognition

2019 Spring, CMU AI Seminar. Geometry-Aware Recurrent Networks: A visual system for embodied agents.

2018 Summer, OpenAI Summer Open House. Robust Vision-Based State Estimation

2017 Spring, CMU AI Seminar. Adversarial Inversion: Self-supervision with Adversarial Priors

2017 Spring, OpenAI Inc.. Generative models with optimized maximum mean discrepancy and adversarial imagination priors

TEACHING EXPERIENCE

Instructor

2019 Summer, CMU AI4ALL. Lecture: Computer Vision

Teaching Assistant

2016 Fall, CMU. 10-601 Introduction to Machine Learning (ML for master students)

2015 Fall, CMU. 10-715 Advanced Introduction to Machine Learning (ML for PhD students)

WORK EXPERIENCE

2018 Summer, OpenAI Inc.. Mentor: Wojciech Zaremba, Peter Welinder
- Robust state estimation for human-like robot hand.

2017 Summer, Adobe Research. Mentor: Ersin Yumer
- Self-supervised Learning of Motion Capture [5]. Policy Leaning in physics simulator.

2016 Summer, Google Brain Team, Google Inc. Mentor: Andrew Dai
- Generative Adversarial Nets (GANs) for Text.

2015 Summer, Parallel Computing Lab, Intel Labs. Mentor: Shang Li
- Accelerating Long Short Term Memory Network with full-stack optimization.

2014 Summer, Machine Learning Department, CMU. Advisor: Aarti Singh

2012 Summer, Home Entertainment group, MediaTek.

AWARDS AND HONOR

2019 Rising Star in EECS

2019 Siemens FutureMaker Fellowship (Awarded)

2019 Yahoo InMind Fellowship (Awarded)

2018 Qualcomm QinF Finalists

2018 Open Philanthropy Project AI Fellows Finalists

2018 Facebook Fellowship Finallists

2014 2017 NIPS Travel Award Winner

2013 KDD Cup Award, Track1&2 Champion[12][13]

2013 NTU Student Outstanding Performance Scholarship

2011 2012 NTU President Award
-Awarded to top 5% of students in each department of National Taiwan University.
-Rank 1/245 in 2012 Spring

2012 Altera Innovate Asia FPGA Design Competition,Outstanding Achievement

PROFESSIONAL SERVICES

Program Committees
Reviewer of ICCV, ECCV, CVPR, NIPS, ICML, ICRA, ICLR, IEEE Image Processing

Conference Workshop Organizer:
2020 CVPR: Minds vs. Machines: How far are we from the common sense of a toddler? [website link]

University Committees:
2019 Speaking Skills Committee for the CMU Machine Learning Department
2016-2018 PhD admission committee for the CMU Machine Learning Department
2015-2016 Master admission committee for the CMU Machine Learning Department

Community Service:
2017 Mentor in Adobe x Girls Who Code
2014 Volunteer in Machine Learning Summer School