Zhibo Yang

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EDUCATION

Stony Brook University, *Stony Brook, NY* *Sep. 2017 – Dec. 2022 (expected)*
Doctor of Philosophy (Ph.D) in Computer Science, GPA: 3.85 / 4.00
Advisor: Dimitris Samaras

The Chinese University of Hong Kong, *Hong Kong* *Aug. 2014 – Jul. 2016*
Master of Philosophy (M.Phil) in Information Engineering, GPA: 3.81 / 4.00
Advisor: Wing Cheong Lau, Chen Change Loy

Harbin Institute of Technology, *Harbin, China* *Sep. 2010 – Jul. 2014*
Bachelor of Engineering (B.E.) in Software Engineering, GPA: 88.2/100.0 (rank 5/102)

WORK EXPERIENCE

Software Engineer Intern – Perception @ Waymo, *Mountain View, CA* *Jun. 2021 – Sep. 2021*
- Designed and implemented construction zone detector based on CenterNet using Tensorflow
- Improved the detection speed by 162% and the traffic cone grouping accuracy by 37% compared to the baseline

Applied Scientist Intern – Visual Search & AR @ Amazon A9, *Palo Alto, CA* *Jun. 2020 – Oct. 2020*
- Improved the mAP of existing image retrieval system from 0.62 to 0.76 by using self-supervised learning
- Shipped two image retrieval models which outperforms existing system to production

ACADEMIC PROJECTS

Human Scanpath Prediction Using Inverse Reinforcement Learning *ongoing*
- Designed a novel state representation using Panoptic-FPN and implemented neural networks for scanpath prediction using adversarial inverse reinforcement learning in Python and PyTorch
- Reduced the search probability mismatch by 45% compared with a strong baseline
- A oral paper was accepted to CVPR 2020 and was nominated for Best Paper Award (26 out of 5865 submissions).

Viewport Prediction for 360-degree Video Streaming *Nov. 2018 – Apr. 2019*
- Devised and trained CNN-LSTM and 3DCNN based on I3D model for video viewport prediction using PyTorch
- Improved the median video quality by 50% compared with conventional video streaming methods

HiQ: High-Capacity Color QR Codes for Mobile Applications *Aug. 2014 – Jul. 2017*
- Designed a novel high-capacity color QR code (HiQ) framework which was licensed a US patent.
- Developed a chromatic distortion correction algorithm using non-convex optimization in MATLAB and Java
- Increased the decoding success rate of the baseline by 188% and reduced the bit error rate by 60% for mobile applications

PUBLICATIONS

- **Z. Yang**, M. Bastan, X. Zhu, D. Gray, D. Samaras. "Hierarchical Proxy-based Loss for Deep Metric Learning." *WACV*, 2022
- **Z. Yang**, L. Huang, Y. Chen, S. Ahn, Z. Wei, G. Zelinsky, D. Samaras and M. Hoai. "Predicting Goal-directed Human Attention Using Inverse Reinforcement Learning." *CVPR* (oral), 2020, **Best Paper Nomination**
- Y. Chen, **Z. Yang**, S. Ahn, D. Samaras and M. Hoai, G. Zelinsky. "COCO-Search18 fixation dataset for predicting goal-directed attention control." *Scientific Reports*, 2021
- G. Zelinsky, **Z. Yang**, L. Huang, Y. Chen, S. Ahn, Z. Wei, H. Adeli, D. Samaras and M. Hoai. "Benchmarking Gaze Prediction for Categorical Visual Search." *CVPR Workshops* (oral), 2019
- **Z. Yang**, H. Xu, J. Deng, C. C. Loy and W. C. Lau. "HiQ: Robust and Fast Decoding of High-Capacity QR Codes." *IEEE Transactions on Image Processing*, 27(12), pp.6093-6108, 2018
- **Z. Yang**, Z. Cheng, C. C. Loy, W. C. Lau, C. M. Li, G. Li. "Towards Robust Color Recovery for High-Capacity Color QR Codes." *IEEE International Conference on Image Processing (ICIP)*, 2016

HONORS & AWARDS

- Outstanding Reviewer of CVPR 2021 *Jun. 2021*
- CVPR 2020 Best Paper Nomination *Jun. 2020*
- Chairman's Fellowship at Stony Brook University *Sep. 2017*
- Postgraduate Scholarship at The Chinese University of Hong Kong *Aug. 2014 – Jul. 2016*
- National Scholarship of China *Oct. 2012 – Oct. 2013*
- Meritorious Winner of Mathematical Contest in Modeling, USA *Apr. 2013*
  ranking 2%–15% in 5636 teams worldwide

SKILLS & OTHERS

Programming: Proficient in Python, Java, MATLAB, C++/C; Familiar with HTML, SQL, C#
Tools: PyTorch, TensorFlow, OpenCV, Git, Emacs, Unix, Borg, Flume
Professional Activities: Reviewer for CVPR, ICCV, BMVC, AAAI, WACV; Student volunteer for ISIT15, Infocom15