

Siyuan Qiao

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Research Scientist, Google LLC

1600 Amphitheatre Parkway, Mountain View, CA 94043

EDUCATION

Johns Hopkins University

Sep. 2016 – July 2021

Ph.D. in Computer Science

Advisor: *Bloomberg Distinguished Professor Alan Yuille*

Shanghai Jiao Tong University

Sep. 2012 – June 2016

B.Sc. in Computer Science

Graduated with Honors

EXPERIENCE

Google LLC

Aug 2021 – Present

Research Scientist

Job Description: Driven by fundamental research, new product innovation, product contribution, and infrastructure goals, Research Scientists at Google create experiments, prototype implementations, and design new architectures for real-world problems. We also actively contribute to the wider research community by sharing and publishing our findings.

Google LLC

June 2020 – Feb. 2021

Research Intern

Job Description: As a Research Intern at Google Research, I worked on real-world research problems and contributed to the research community by publishing our findings. Host: Liang-Chieh Chen.

Adobe Research

June 2018 – Aug. 2018

Research Intern

Job Description: As a Research Intern at Adobe Research, I worked on real-world research problems and contributed to the research community by publishing our findings. Host: Zhe Lin.

Institute of Deep Learning, Baidu USA

June 2017 – Aug. 2017

Research Intern

Job Description: As a Research Intern at Baidu, I worked on real-world research problems and contributed to the research community by publishing our findings. Hosts: Haichao Zhang and Wei Xu.

Computational Cognition, Vision, and Learning at Johns Hopkins University

Sep. 2016 – July 2021

Research Assistant

Job Description: I worked as a Ph.D. student at Johns Hopkins University on academic problems and contributed to the research community by publishing papers to academic conferences. Advisor: Prof. Alan Yuille.

Computational Cognition, Vision, and Learning at UCLA and Johns Hopkins University

Sep. 2015 – Apr. 2016

Research Assistant

Job Description: I worked as a visiting undergraduate student at UCLA and Johns Hopkins University on academic problems and contributed to the research community by publishing papers to academic conferences. Advisor: Prof. Alan Yuille.

Vision Research Group, Yitu Inc., Shanghai, China

July 2015 – Sep. 2015

Research Intern

Job Description: As a Research Intern at Yitu, I worked on real-world research problems and contributed by sharing our experimental findings, proposing and implementing new designs.

PUBLICATIONS

K-Means Mask Transformer.

Qihang Yu, Huiyu Wang, **Siyuan Qiao**, Maxwell Collins, Yukun Zhu, Hatwig Adam, Alan Yuille and Liang-Chieh Chen.

To appear in *Proceedings of the European Conference on Computer Vision, ECCV 2022*.

Waymo Open Dataset: Panoramic Video Panoptic Segmentation.

Jieru Mei, Alex Zihao Zhu, Xincheng Yan, Hang Yan, **Siyuan Qiao**, Yukun Zhu, Liang-Chieh Chen, Henrik Kretzschmar and Dragomir Anguelov. *To appear in Proceedings of the European Conference on Computer Vision, ECCV 2022.*

CMT-DeepLab: Clustering Mask Transformers for Panoptic Segmentation.

Qihang Yu, Huiyu Wang, Dahun Kim, **Siyuan Qiao**, Maxwell Collins, Yukun Zhu, Hartwig Adam, Alan Yuille and Liang-Chieh Chen. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2022 Oral.*

TubeFormer-DeepLab: Video Mask Transformer.

Dahun Kim, Jun Xie, Huiyu Wang, **Siyuan Qiao**, Qihang Yu, Hong-Seok Kim, Hartwig Adam, In So Kweon and Liang-Chieh Chen. *In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2022.*

ViP-DeepLab: Learning Visual Perception with Depth-aware Video Panoptic Segmentation.

Siyuan Qiao, Yukun Zhu, Hartwig Adam, Alan Yuille and Liang-Chieh Chen.

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2021.

DetectoRS: Detecting Objects with Recursive Feature Pyramid and Switchable Atrous Convolution.

Siyuan Qiao, Liang-Chieh Chen and Alan Yuille.

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2021.

Deeply Shape-guided Cascade for Instance Segmentation.

Hao Ding, **Siyuan Qiao**, Alan Yuille and Wei Shen.

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2021.

Scaling Wide Residual Networks for Panoptic Segmentation.

Liang-Chieh Chen, Huiyu Wang and **Siyuan Qiao**. *arXiv preprint 2020.*

Batch Normalization with Enhanced Linear Transformation.

Yuhui Xu, Lingxi Xie, Cihang Xie, Jieru Mei, **Siyuan Qiao**, Wei Shen, Hongkai Xiong and Alan Yuille. *arXiv preprint 2020.*

Robust Face Detection via Learning Small Faces on Hard Images.

Zhishuai Zhang, Wei Shen, **Siyuan Qiao**, Yan Wang, Bo Wang and Alan Yuille.

In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision, WACV 2020.

TDMPNet: Prototype Network with Recurrent Top-Down Modulation for Robust Object Classification Under Partial Occlusion. Mingqing Xiao, Adam Kortylewski, Ruihai Wu, **Siyuan Qiao**, Wei Shen and Alan Yuille.

In Proceedings of the European Conference on Computer Vision, ECCV 2020.

Neural Rejuvenation: Improving Deep Network Training by Enhancing Computational Resource Utilization.

Siyuan Qiao, Zhe Lin, Jianming Zhang and Alan Yuille.

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2019 Oral.

Micro-Batch Training with Batch-Channel Normalization and Weight Standardization.

Siyuan Qiao, Huiyu Wang, Chenxi Liu, Wei Shen and Alan Yuille. *arXiv preprint 2019.*

Training Deep Neural Networks in Generations: A More Tolerant Teacher Educates Better Students.

Chenglin Yang, Lingxi Xie, **Siyuan Qiao**, and Alan Yuille.

In Proceedings of the AAAI Conference on Artificial Intelligence, AAAI 2019.

Deep Co-Training for Semi-Supervised Image Recognition.

Siyuan Qiao, Wei Shen, Zhishuai Zhang, Bo Wang and Alan Yuille.

In Proceedings of the European Conference on Computer Vision, ECCV 2018.

Multi-Scale Spatially-Asymmetric Recalibration for Image Classification.

Yan Wang, Lingxi Xie, **Siyuan Qiao**, Ya Zhang, Wenjun Zhang and Alan Yuille.

In Proceedings of the European Conference on Computer Vision, ECCV 2018.

Gradually Updated Neural Networks for Large-Scale Image Recognition.

Siyuan Qiao, Zhishuai Zhang, Wei Shen, Bo Wang and Alan Yuille.

In International Conference on Machine Learning, ICML 2018 Oral.

Few-Shot Image Recognition by Predicting Parameters from Activations.

Siyuan Qiao, Chenxi Liu, Wei Shen and Alan Yuille.

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2018 Spotlight.

Single-Shot Object Detection with Enriched Semantics.

Zhishuai Zhang, **Siyuan Qiao**, Cihang Xie, Wei Shen, Bo Wang and Alan Yuille.

In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVPR 2018.

UnrealCV: Virtual Worlds for Computer Vision.

Weichao Qiu, Fangwei Zhong, Yi Zhang, **Siyuan Qiao**, Zihao Xiao, Tae Soo Kim and Yizhou Wang.

In Proceedings of the 25th ACM International Conference on Multimedia, ACM MM 2017.

Progressive Recurrent Learning for Visual Recognition.

Xutong Ren, Lingxi Xie, Chen Wei, **Siyuan Qiao**, Chi Su, Jiaying Liu and Alan Yuille. *arXiv preprint 2018.*

ScaleNet: Guiding Object Proposal Generation in Supermarkets and Beyond.

Siyuan Qiao, Wei Shen, Weichao Qiu, Chenxi Liu and Alan Yuille.

In Proceedings of the IEEE International Conference on Computer Vision, ICCV 2017.

SORT: Second-Order Response Transform for Visual Recognition.

Yan Wang, Lingxi Xie, Chenxi Liu, **Siyuan Qiao**, Ya Zhang, Wenjun Zhang, Qi Tian and Alan Yuille.

In Proceedings of the IEEE International Conference on Computer Vision, ICCV 2017.

Unleashing the Potential of CNNs for Interpretable Few-Shot Learning.

Boyang Deng, Qing Liu, **Siyuan Qiao** and Alan Yuille. *arXiv preprint 2017.*

Few-Shot Learning by Exploiting Visual Concepts within CNNs.

Boyang Deng, Qing Liu, **Siyuan Qiao** and Alan Yuille. *arXiv preprint 2017.*

Structure-Aware QR Code Abstraction.

Siyuan Qiao, Xiaoxin Fang, Bin Sheng, Wen Wu and Enhua Wu.

The Visual Computer, 31(6), pp.1123-1133. Computer Graphics International 2015 Best Paper Award.

PATENTS

Resource-Aware Training for Neural Networks.

Zhe Lin, Siyuan Qiao and Jianming Zhang. *US 16254406.*

Compression of Machine Learning Models.

Zhe Lin, Yilin Wang, Siyuan Qiao and Jianming Zhang. *US 16563226.*

Convolutional Neural Networks with Adjustable Feature Resolutions at Runtime.

Zhe Lin, Yilin Wang, Siyuan Qiao and Jianming Zhang. *US 16751897.*

SERVICES

Invited Conference Reviewer for CVPR, ICCV, ECCV, AAAI, ICML, NeurIPS, ICLR, *etc.*

Invited Journal Reviewer for TPAMI, Pattern Recognition, Neurocomputing, IEEE Transactions on Multimedia, *etc.*

TEACHING

Johns Hopkins University

Spring 2019

Role: Teaching Assistant. Course: EN.601.783 Vision as Bayesian Inference.