

Yang Gao

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Education

- 2014–Present **Ph.D. in Computer Science, UC Berkeley, CA, USA.**
Work with Trevor Darrell with interests in **Computer Vision** and **Autonomous Driving**.
Selected Courses: Statistical Machine Learning, Convex Optimization, Theoretical Statistics,
Computer Vision, Object and Activity Recognition.
- 2010–2014 **B.Eng. in Computer Science, Tsinghua University, Beijing, China.**
GPA – 92.2/100(3.88/4.0). Rank – 2/100.
Graduated with Honor.

Experiences

- Summer 2018 **Research Intern, Intelligent Systems Lab, Intel.**
Manager: Vladlen Koltun.
Topic: Simulation to real world transfer of autonomous driving.
- Develop a full vision-based perception stack for autonomous driving, including state of art semantic segmentation, object detection and monocular depth estimation.
 - Train a modular abstraction driving policy with the state of art visual perception modules and the latest version of CARLA.
 - Proposed novel techniques including sensor modality dropout, structured perception noise, map-as-sensor to bridge the gap between simulation and real world.
 - Customize the Lincoln MKZ real world testing platform and be the first one to successfully run a purely simulation-trained agent in the real world urban scenarios.
- Summer 2016 **Research Intern, Waymo, Google.**
Manager: Wanyen Lo, Abhijit Ogale and Alex Krizhevsky.
Topic: Systematic methods for fixing errors in neural networks.
- Propose a novel method for correcting errors in neural networks, with monotonic performance improvement guarantees.
 - Implemented the proposed method and help to push it to production, which improves the performance of the traffic sign detection task.
- 2014–Present **Graduate Student Researcher, Computer Vision Group, UC Berkeley.**
With Prof. Trevor Darrell and Sergey Levine
Topic: Various computer vision and reinforcement learning problems.
- Proposed novel methods for learning complex driving behavior in an end-to-end manner from large crowd sourced dataset
 - Proposed "Compact Bilinear Pooling" for the fine grained recognition task. The method was latter applied to the Visual Question Answering competition and achieved the top performance that year.
 - Supervised Marcel Simon, a visitor from Friedrich-Schiller-Universitat, Jena, Germany, on an extension work based on compact bilinear pooling.
 - Proposed a novel method that unifies imitation learning and reinforcement learning in a single framework with Prof. Sergey Levine.
 - Proposed a method that learns from visual and haptics modalities at the same time.

- Summer 2013 **Research Assistant, Bioinformatics Group, Stanford.**
Advisor: Prof. David Dill and Prof. Subarna Sinha
Topic: Worked on finding genes that could selectively kill cancer cells.
- 2013–2014 **Research Assistant, Machine Learning Group, Tsinghua.**
Advisor: Prof. Jun Zhu
Topic: a new streaming Gibbs sampler for LDA topic
◦ Proposed a mini-batch streaming Gibbs sampler for LDA topic models, with two orders of magnitude speed improvement compared to the batch counterpart.
- 2011–2012 **Research Intern, Natural Language Processing Research Group, Google.**
Advisor: Edward Chang and Fangtao Li
Topic: Improved the deceptive answer detection module in Google Question Answering system.

Publications and Preprints

- 2018 **Yang Gao**, German Ros, Chen Tang, Trevor Darrell and Vladlen Koltun. Towards Bridging the Reality Gap for Urban Driving. *Preprint*
- 2018 **Yang Gao***, Huazhe Xu*, Ji Lin, Fisher Yu, Sergey Levine and Trevor Darrell. Soft Advantage Learning: A Unified Method that Learns from Demonstrations and Environments. *Preprint*
- 2017 Marcel Simon, **Yang Gao**, Trevor Darrell, Joachim Denzler and Erik Rodner. Generalized Orderless Pooling Performs Implicit Salient Matching. *International Conference on Computer Vision (ICCV), 2017*. [PDF](#)
- 2017 **Yang Gao***, Huazhe Xu*, Fisher Yu and Trevor Darrell. End-to-end Learning of Driving Models from Large-scale Video Datasets. *Computer Vision and Pattern Recognition (CVPR), 2017, Oral*. [PDF](#)
- 2016 **Yang Gao**, Oscar Beijbom, Ning Zhang and Trevor Darrell. Compact Bilinear Pooling. *Computer Vision and Pattern Recognition (CVPR), 2016*. [PDF](#)
- 2016 Ning Zhang, Evan Shelhamer, **Yang Gao** and Trevor Darrell. Fine-grained pose prediction, normalization, and recognition. *International Conference on Learning Representations (ICLR), 2016, Workshop*. [PDF](#)
- 2016 **Yang Gao**, Lisa Anne Hendricks, Katherine J. Kuchenbecker and Trevor Darrell. Deep Learning for Tactile Understanding From Visual and Haptic Data. *In Proc. International Conference on Robotics and Automation (ICRA), 2016*. [PDF](#)
- 2016 **Yang Gao**, Jianfei Chen and Jun Zhu. Streaming Gibbs Sampling for LDA Model. *arXiv preprints*. [PDF](#)
- 2013 Fangtao Li, **Yang Gao**, Shuchang Zhou, Xiance Si and Decheng Dai. Deceptive Answer Prediction with User Preference Graph. *Association for Computational Linguistics (ACL), Sofia, Bulgaria, 2013*. [PDF](#)

Teaching

- Spring 2018 **Graduate TA for CS189 Introduction to Machine Learning, UC Berkeley, CA.**
Teach an one-hour lecture once a week. Prepare homework problems, midterms and finals. Hold an one hour homework party every week.

Spring 2019 **Graduate TA for CS189 Introduction to Machine Learning, UC Berkeley, CA.**
Going to teach CS189 again next semester and will play more management roles, such as leading the Piazza discussions.