Tongzhou **Wang**

✉ tongzhou.wang.1994@gmail.com | ⌂ ssnl.github.io | Google Scholar | SsnL

Education

University of California, Berkeley   *Berkeley, CA*

B.A. IN COMPUTER SCIENCE AND STATISTICS   *Aug. 2013 - May 2017*

- Course works touch various aspects of computer science, statistics and mathematics with emphasis on AI, including computer vision, machine learning, probabilistic modeling and inference, *etc.*
- GPA: 3.90/4.00. Technical GPA: 3.98/4.00.

Research & **P**ublications

Neural Block Sampling [Submitted to AISTATS 2018] [arXiv]

TONGZHOU WANG, YI WU, DAVID MOORE, STUART RUSSELL

- Automated MCMC proposal construction by training neural networks as fast approximations to block Gibbs conditionals. The learned proposals generalize to occurrences of common structural motifs both within a given model and across models, allowing for the construction of a library of learned inference primitives that can accelerate inference on unseen models with no model-specific training required.
- Oral presentation at ICML 2017 AutoML workshop. [slides]

Learning to Synthesize a 4D RGBD Light Field from a Single Image [ICCV 2017] [arXiv]

PRATUL SRINIVASAN, TONGZHOU WANG, ASHWIN SREELAL, RAVI RAMAMOORTHI, REN NG

- A machine learning algorithm that takes as input a 2D RGB image and synthesizes a 4D RGBD light field (color and depth of the scene in each ray direction). For training, we introduce the largest public light field dataset. Our algorithm is unique in predicting RGBD for each light field ray and improving unsupervised single image depth estimation by enforcing consistency of ray depths that should intersect the same scene point.

Semi-supervised Image-to-Image Translation among Multiple Datasets

TONGZHOU WANG WITH RESEARCH GROUP OF PROF. ALEXEI EFROS

- On-going project on using longer cycles to achieve image-to-image translation among more than two datasets, where some datasets are paired and some are not. Potential applications include domain adaptation with large amount of unlabeled images.

Improved Training of Cycle-Consistent Adversarial Networks

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- Analysis and improvement on pixel-level cycle consistency loss in CycleGAN with three novel modifications to the loss that reduce artifacts in generated images. This part is a project of a graduate-level computer vision course in collaboration with Yihan Lin. [paper] [slides]
- On-going project on improving CycleGAN by designing better formulation and/or automatic dataset selection algorithms.

Analysis on Punctuations in Online Reviews [paper] [poster]

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- Analysis on punctuation structures in positive and negative online Steam reviews with an HMM model where the auxiliary sentence type variables are hidden and conditional probabilities of observed punctuations are modeled as from Markov chains based on the sentence types.
- Course project of graduate-level statistical learning theory class.

Industrial **E**xperience

Facebook, Inc.   *New York, NY*

FRAMEWORK ENGINEER AT FACEBOOK AI RESEARCH (FAIR)   *Aug. 2017 - PRESENT*

- Building PyTorch, a deep learning framework with dynamic computation graph.

Airbnb, Inc.   *San Francisco, CA*

SOFTWARE ENGINEER INTERN AT DATA INFRASTRUCTURE TEAM   *May 2016 - Aug. 2016*

- Built a collection of internal tools to utilize HBase as a high-performance relational database through Apache Phoenix.
- Developed a pipeline to automate loading data and building secondary indices, enabling querying Hive data with more than $100\times$ speed-up.

Facebook, Inc.   *Seattle, WA*

SOFTWARE ENGINEER INTERN AT ADS PRODUCT PLATFORM TEAM   *Jun. 2015 - Aug. 2015*

- Developed tools to browse, analyze and replay ads HTTP requests, including front-end UI events, ads API calls, and back-end mutations.
- Utilized the unified logging framework to analyze ads bug reports and to suggest engineers that are likely responsible.

Grue, Inc.   *Berkeley, CA*

CO-FOUNDER & SOFTWARE ENGINEER   *Mar. 2015 - Aug. 2015*

- An iOS app that helps students explore and sign-up for upcoming events, provides check-in via QR code, and gathers statistics for organizers.
- Worked on back-end database design, database update logic and front-end UI.