

Ning Zhang

CONTACT INFORMATION

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RESEARCH INTERESTS

Computer vision, deep learning and machine learning

EXPERIENCES

Snap Inc., Venice, CA, USA

Senior Research Scientist. Manager: Dr. David Salesin

Jun 2015 - present

- Large scale image tagging system.
 - Train the client-side convolution models for image tagging, launched in Memory Search Product.
 - Server-side large-scale deep learning models (trained on over 5000 image categories and over 3 million Snapchat Images).
 - Evaluation and quality control pipeline.
- Fast and efficient deep learning framework.
 - Develop client side deep learning library for inference, supporting multiple features launched in Snapchat app.
 - Leading the efforts of using quantization and binarization techniques to compress the learned models.
- Other computer vision applications.
 - Style transfer on client side.
 - Generic object recognition on client side.
 - Word recognition, custom snap code, etc.

Facebook Inc., Menlo Park, CA, USA

Research Intern with Dr. Lubomir Bourdev

May 2013 - Nov 2013, Jun 2014 - Nov 2014

- Research project of using pose-aligned deep networks for human attribute classification, published in CVPR 2014.
- Research project for person recognition beyond frontal face, published in CVPR 2015.

EDUCATION

University of California at Berkeley, Berkeley, CA

Sep 2010 - Jun 2015

Ph.D. in Computer Science

Advisor: Prof. Trevor Darrell.

Dissertation: “Visual Representations for Fine-grained Categorization”

M.A., Statistics, May 2013.

Tsinghua University, Beijing, China

Sep 2006 - Jun 2010

B.S., Computer Science.

Recipient of the first-class scholarship for three consecutive years.

Worked in collaborative filtering, topic modeling with Prof. Jie Tang.

PUBLICATIONS

- Wang S., Luo L., **Zhang, N.**, Li, J. **AutoScaler: Scale-Attention Networks for Visual Correspondence.** British Machine Vision Conference (BMVC), **ORAL**, London, UK, 2017.
- Zhou R., Wang X., **Zhang, N.**, Lv, X., Li, J. **Deep Reinforcement Learning-based Image Captioning with Embedding Reward.** Computer Vision and Pattern Recognition (CVPR), **ORAL**, Honolulu, HI, 2017.
- Zhang, N.**, Shelhamer E., Gao Y., Darrell, T. **Fine-grained Pose Prediction, Normalization, and Recognition.** International Conference on Learning Representations (ICLR), 2016, Workshop.
- Gao, Y., Beijbom O., **Zhang, N.**, Darrell, T. **Compact Bilinear Pooling.** Computer Vision and Pattern Recognition (CVPR), Las Vegas, NV, 2016.
- Zhang, N.**, Paluri, M., Tagiman Y., Fergus R., Bourdev, L. **Beyond Frontal Faces: Improving Person Recognition Using Multiple Cues.** Computer Vision and Pattern Recognition (CVPR), Boston, MA, 2015.
- Long, J., **Zhang, N.**, Darrell, T. **Do Convnets learn correspondence?** Neural Information Processing Systems Foundation (NIPS), Montreal, Canada, 2014.
- Zhang, N.**, Donahue, J., Girshick, R., Darrell, T. **Part-based R-CNNs for Fine-grained Category Detection.** European Conference on Computer Vision (ECCV), **ORAL**, Zurich, Switzerland, 2014.
- Zhang, N.**, Paluri, M., Ranzato, M., Darrell, T, Bourdev, L. **PANDA: Pose Aligned Networks for Deep Attribute Modeling.** Computer Vision and Pattern Recognition (CVPR), **ORAL**, Columbus, OH, 2014.
- Donahue, J., Jia, Y., Vinyals, O., Huffman, J., **Zhang, N.**, Tzeng, E., Darrell, T. **DeCAF: A Deep Convolutional Activation Feature for Generic Visual Recognition.** International Conference on Machine Learning (ICML), Beijing, China, 2014.
- Guadarrama, S., Rodner, E., Saenko, K., **Zhang, N.**, Farrell, R., Donahue, J., Darrell, T. **Open-vocabulary Object Retrieval.** Robotics Science and Systems (RSS), Berkeley, CA, 2014.
- Zhang, N.**, Farrell, R., Iandola, F., Darrell, T. **Deformable Part Descriptors for Fine-grained Recognition and Attribute Prediction.** International Conference on Computer Vision (ICCV), Sydney, Australia, 2013.
- Zhang, N.**, Farrell, R., Darrell, T. **Pose Pooling Kernels for Sub-category Recognition.** Computer Vision and Pattern Recognition (CVPR), Providence RI, 2012.
- Farrell, R., Oza, O., **Zhang, N.**, Morariu, V., Darrell, T., Davis, L. **Birdlets: Subordinate Categorization Using Volumetric Primitives and Pose-Normalized Appearance.** International Conference on Computer Vision (ICCV), **ORAL** presentation, Barcelona, Spain, 2011.
- Zhang, Y., **Zhang, N.**, Tang, J., Rao, J., Tang, W. **MQuery: Fast Graph Query via Semantic Indexing for Mobile Context.** IEEE/WIC/ACM International Conference on Web Intelligence (WI), Toronto, Canada, 2010.
- Zhang, N.**, Zhang, Y. **A Tag Recommendation System for Folksonomy.** The 2nd Workshop on Social Web Search and Mining (SWSM), Hong Kong, 2009.

HONORS AND
AWARDS

Computer Science Department Fellowship, UC Berkeley, 2010
The first class scholarship of Tsinghua University (TicketMaster Scholarship), 2009.
The first class scholarship of Tsinghua University (Hewlet & Packard Scholarship), 2008.
The first class scholarship of Tsinghua University (Sohu Scholarship), 2007.

TEACHING
EXPERIENCE

Graduate Student Instructor (GSI), UC Berkeley
CS 188: Introduction to Artificial Intelligence
Fall 2013, with Prof. Dan Klein and Prof. Pieter Abbeel
CS 189: Introduction to Machine Learning
Spring 2014 with Prof. Jitendra Malik and Prof. Alexei Efros