# XIN WANG

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## EMPLOYMENT

**Microsoft Research** *May 2021 -*
Senior Researcher at Computer Vision Group

**University of California, Berkeley** *Jan 2021 - May 2021*
Interim Postdoc

## EDUCATION

**University of California, Berkeley** *August 2015 - December 2020*
Ph.D. in Computer Science
Advisors: Prof. Joseph E. Gonzalez, Prof. Trevor Darrell
Field: Computer Vision, Machine Learning

**Shanghai Jiao Tong University** *September 2011 - June 2015*
Bachelor of Arts in Computer Science
Graduated from IEEE Pilot Class

## PREPRINTS

[1] **Xin Wang**, Fisher Yu, Trevor Darrell, and Joseph E. Gonzalez
"Task-Aware Feature Generation for Zero-Shot Compositional Learning", arXiv 2019

## PUBLICATIONS

[15] **Xin Wang**, Thomas E. Huang*, Benlin Liu* Fisher Yu, Xiaolong Wang,
Joseph E. Gonzalez and Trevor Darrell
"Robust Object Detection via Instance-Level Temporal Cycle Confusion", International Conference on Computer Vision (ICCV), 2021

[14] Jianren Wang, **Xin Wang**, Yue Shang-Guan, Abhinav Gupta
"Wanderlust: Online Continual Object Detection in the Real World", International Conference on Computer Vision (ICCV), 2021

[13] Jinkun Cao, **Xin Wang**, Trevor Darrell, Fisher Yu
"Instance-Aware Predictive Navigation in Multi-Agent Environments"
2021 IEEE International Conference on Robotics and Automation (ICRA)

[12] **Xin Wang***, Thomas E. Huang*, Trevor Darrell, Joseph E. Gonzalez, Fisher Yu
"Frustratingly Simple Few-Shot Object Detection"
International Conference on Machine Learning (ICML), 2020

[11] Yanzhao Zhou, **Xin Wang**, Jianbin Jiao, Trevor Darrell, Fisher Yu
"Learning Saliency Propagation for Semi-Supervised Instance Segmentation"
Computer Vision and Pattern Recognition (CVPR), 2020

[10] Fisher Yu, Haofeng Chen, **Xin Wang**, Wenqi Xian, Yingying Chen, Fangchen Liu, Vashisht Madhavan, Trevor Darrell
"BDD100K: A Diverse Driving Dataset for Heterogeneous Multitask Learning"
Computer Vision and Pattern Recognition (CVPR), 2020, Oral

[9] Bingyi Kang*, Zhuang Liu*, **Xin Wang**, Fisher Yu, Jiashi Feng, Trevor Darrell
"Few-shot Object Detection via Feature Reweighting",
International Conference on Computer Vision (ICCV), 2019

[8] Zuxuan Wu, **Xin, Wang**, Joseph E. Gonzalez, Tom Goldstein, Larry S. Davis
"ACE: Adapting to Changing Environments for Semantic Segmentation"
International Conference on Computer Vision (ICCV), 2019

[7] **Xin Wang**, Fisher Yu, Ruth Wang, Trevor Darrell, Joseph E. Gonzalez
"TAFE-Net: Task-Aware Feature Embeddings for Efficient Learning and Inference"
Conference on Computer Vision and Pattern Recognition (CVPR) 2019

[6] Samvit Jain, **Xin Wang**, Joseph E. Gonzalez
"Accel: A Corrective Fusion Network for Efficient Semantic Segmentation on Video"
Conference on Computer Vision and Pattern Recognition (CVPR) 2019, Oral

[5] **Xin Wang**, Fisher Yu, Lisa Dunlap, Yi-an Ma, Azalia Mirhoseini, Trevor Darrell, Joseph E. Gonzalez
"Deep Mixture of Experts via Shallow Embedding"
Conference on Uncertainty in Artificial Intelligence (UAI) 2019

[4] **Xin Wang**, Fisher Yu, Zi-Yi Dou, Trevor Darrell, Joseph E. Gonzalez
"SkipNet: Learning Dynamic Routing in Convolutional Networks"
European Conference on Computer Vision (ECCV) 2018

[3] **Xin Wang**, Yujia Luo, Daniel Crankshaw, Alexey Tumanov, Fisher Yu, Joseph E. Gonzalez
"IDK Cascades: Fast Deep Learning by Learning not to Overthink"
Conference on Uncertainty in Artificial Intelligence (UAI) 2018

[2] Daniel Crankshaw, **Xin Wang**, Guilio. Zhou, Michael Franklin, Joseph E. Gonzalez, Ion Stoica
"Clipper: A Low-Latency Online Prediction Serving System"
USENIX Symposium on Networked Systems Design and Implementation (NSDI) 2017

[1] Daniel Crankshaw, **Xin Wang**, Jospeh E. Gonzalez, Michael Franklin
"Scalable Training and Serving of Personalized Models"
LearningSys 2015

## OPEN-SOURCE TOOLS AND SOFTWARE

**Scalabel: Human-machine collaboration platform for visual data annotation**
- Scalabel (pronounced "scalable") is a versatile and scalable annotation platform, supporting both 2D and 3D data labeling. BDD100K, one of the largest driving video datasets, is labeled with this tool.
- Code repository: `https://github.com/scalabel/scalabel`

**Clipper: a low-latency prediction serving system for machine learning**
- Clipper is a low-latency prediction serving system for machine learning. Clipper makes it simple to integrate machine learning into user-facing serving systems.
- Web-page: `http://clipper.ai/`

## INVITED TALKS

**Last Mile Delivery of Computer Vision with Test-time Adaptation**
*Carnegie Mellon University, Pittsburgh, PA.* August 2020
Host: Prof. Abhinav Gupta

*Facebook AI Research, Menlo Park, CA.* October 2020
Host: Dr. Marc'Aurelio Ranzato

*Waymo Research, Mountain View, CA* October 2020
Host: Dr. Yin Zhou

**Motion Understanding via Heterogeneous Multitask Learning** June 2020
Keynote talk at *MOTChallenge Workshop: Multi-Object Tracking and Segmentation, CVPR 2020*

**Towards Human-Level Recognition and Generalization via Dynamic Representations**
*Max Planck Institute for Informatics, Saarbrcken, Germany* February 2020
Host: Prof. Christian Theobalt and Prof. Bernt Schiel

**Dynamic Neural Networks for Efficient Learning and Inference**
*Peking University, Beijing, China* April 2019
Host: Prof. Baoquan Chen

## PROFESSIONAL SERVICE

**Board Member Workshop Organizer**
- Co-organizer of ECCV 2020 workshop on Women in Computer Vision (**WiCV**) 2020
- Co-organizer of ICML 2020 workshop on Human in the Loop Learning (**HILL**) 2020
- Co-organizer of ICML 2019 workshop on Human in the Loop Learning (**HILL**) 2019

**Conference Reviewer**
- Reviewer of Conference on Computer Vision and Pattern Recognition (**CVPR**) 2018, 2020
- Reviewer of Conference on Computer Vision and Pattern Recognition (**CVPR**) 2018, 2020
- Reviewer of Neural Information Processing Systems (**NeurIPS**) 2018, 2019, 2020
- Reviewer of International Conference on Machine Learning (**ICML**) 2018, 2019
- Reviewer of Machine Learning Systems workshop (**LearningSys**) 2017, 2018
- Reviewer of Women in Machine Learning workshop(**WiML**) 2017, 2018

**Faculty (Student) Hiring Committee**
EECS, UC Berkeley 2019

**Ph.D. Admission Committee**
EECS, UC Berkeley 2017

## HONORS AND AWARDS

- **Rising Stars in EECS**, 2020
- **Travel Award, ICML 2020**, 2020
- **Doctoral Consortium, CVPR 2019**, 2019
- **EECS Departmental Fellowship**, UC Berkeley 2015-2016
- **National Scholarship**, *highest scholarship in China* 2012-2013
- **National Endeavor Scholarship**, China 2013-2014
- **First Class Academic Excellence Award**, SJTU 2012-2014

## PROFESSIONAL EXPERIENCES

**Real-time Intelligent Secure Execution Lab, UC Berkeley** *August 2015 - Present*
Graduate student researcher with Prof. Joseph E. Gonzalez
- Work on various neural network designs for few-shot object detection and classification
- Designed SkipNet for efficient learning and inference
- Built Clipper, a low latency model serving system

**Berkeley AI Research (BAIR) and Berkeley DeepDrive (BDD)** *May 2017 - Present*
Graduate student researcher with Prof. Trevor Darrel and Dr. Fisher Yu
- Work on large scale data collection and annotation platform, Scalabel, https://www.scalabel.ai/
- Work on large scale driving dataset collection with human in the loop

**Applied Machine Learning, Uber Inc.** *May 2016 - August 2016*
Research intern with Dr. Li Erran Li
- Built an auto-reply system for customer tickets with machine learning techniques

**Shanghai Jiao Tong University** *January 2014 - June 2015*
Undergraduate researcher with Prof. Xiaotie Deng and Prof. Bo Yuan
- Worked on statistical machine learning and algorithmic game theory

**University of Toronto** *August 2013 - December 2013*
Undergraduate researcher with Prof. Anna Goldenberg
- Applied statistical machine learning to analyze patient RNA sequence data

## TEACHING EXPERIENCES

- **DS100: Principles and Techniques of Data Science**, Fall 2017
  Graduate Student Instructor, UC Berkeley
- **Capstone project in Visual Computing & Computer Graphics of M.Eng.**, Spring 2019
  Graduate Student Instructor, UC Berkeley
- **CS294-162 AI-Sys Graduate Seminar** Spring & Fall 2019
  Graduate Student Instructor, UC Berkeley

## RESEARCH MENTORING

- Thomas E. Huang Fall 2019 -
  *Ph.D. Student at University of Michigan*
  Worked on few-shot object detection, work published at ICML 2020
- Jinkun Cao Summer 2019 -
  *visiting undergraduate, now Ph.D. student at Carnegie Mellon University*
  Worked on instance-aware driving policy learning, work submitted to RA-L 2021
- Haofeng Chen Fall 2018 - Spring 2020
  *visiting undergraduate, now master student at Stanford University*
  Worked on BDD100K, a large scale driving dataset, work published at CVPR 2020
- Ruth Wang Fall 2018
  *exchanged student, now master student at Columbia University*
  Worked on task-aware feature embeddings for few-shot learning, work published at CVPR 2019
- Lisa Dunlap Spring 2018
  *undergraduate at UC Berkeley*
  Worked on deep mixture of experts for efficient inference, work published at UAI 2019
- Zi-Yi Dou Fall 2017
  *exchanged student, now master student at Carnegie Mellon University*
  Worked on dynamic neural networks for efficient inference, work published at ECCV 2018

## LANGUAGE AND SKILLS

- **Languages**: English (proficient), Mandarin (native)

- **Skills**: Python, Java, C++, Matlab, PyTorch, TensorFlow