

Chao-Yuan Wu

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WORK EXPERIENCE

- Feb 2021-present **Facebook AI Research (FAIR)**, Menlo Park, CA
Research Scientist
- May 2018-Dec 2019 **Facebook AI Research (FAIR)**, Seattle, WA
Researcher / External Research Collaborator (Sep 2018-Dec 2019)
Research Intern (May-Aug 2018)
 - Mentor: Ross Girshick
 - Video understanding [CVPR 2019] and efficient video model training [CVPR 2020].
- Sep 2016-Dec 2017 **Amazon**, Palo Alto, CA
Applied Scientist Intern
 - Mentor: R Manmatha & Alex Smola
 - Image embedding learning [ICCV 2017] and action recognition [CVPR 2018].
- May-Aug 2016 **Google**, Mountain View, CA
Intern
 - Mentor: Gowtham Ramani Kumar & Amr Ahmed
 - Shopping query modeling [WWW 2017].
- Jan-Aug 2015 **Netflix**, Los Gatos, CA
Research Intern
 - Mentor: Chris Alvino
 - Modeling navigation signals in recommender systems [RecSys 2016].

EDUCATION

- 2015-2021 **The University of Texas at Austin**, Austin, TX, USA
Ph.D. in Computer Science
 - Advisor: Philipp Krähenbühl
- 2013-2015 **Carnegie Mellon University**, Pittsburgh, PA, USA
M.S. in Machine Learning
 - Advisor: Alex Smola
- 2007-2012 **National Taiwan University**, Taipei, Taiwan
B.S. in Electrical Engineering

AWARDS

- **Facebook Fellowship**, 2019-2021
- **NVIDIA Graduate Fellowship Finalist**, 2019-2020
- **Graduate Dean's Prestigious Fellowship Supplement Fellow**, 2019
- **NeurIPS Top 10% Reviewer Award**, 2020
- **CVPR Outstanding Reviewer Award**, 2019

REFEREED CONFERENCE PAPERS

- 13 **Towards Long-Form Video Understanding**
Chao-Yuan Wu, Philipp Krähenbühl
CVPR 2021
- 12 **Memory Optimization for Deep Networks**
Aashaka Shah, Chao-Yuan Wu, Jayashree Mohan, Vijay Chidambaram, Philipp Krähenbühl
ICLR 2021 (**spotlight**)
- 11 **A Multigrid Method for Efficiently Training Video Models**
Chao-Yuan Wu, Ross Girshick, Kaiming He, Christoph Feichtenhofer, Philipp Krähenbühl
CVPR 2020 (**oral**)
- 10 **Fashion++: Minimal Edits for Outfit Improvement**
Wei-Lin Hsiao, Isay Katsman*, Chao-Yuan Wu*, Devi Parikh, Kristen Grauman
ICCV 2019
- 9 **Long-Term Feature Banks for Detailed Video Understanding**
Chao-Yuan Wu, Christoph Feichtenhofer, Haoqi Fan, Kaiming He, Philipp Krähenbühl, Ross Girshick
CVPR 2019 (**oral**)
- 8 **Video Compression through Image Interpolation**
Chao-Yuan Wu, Nayan Singhal, Philipp Krähenbühl
ECCV 2018
- 7 **Compressed Video Action Recognition**
Chao-Yuan Wu, Manzil Zaheer, Hexiang Hu, R Manmatha, Alex Smola, Philipp Krähenbühl
CVPR 2018 (**spotlight**)
- 6 **Sampling Matters in Deep Embedding Learning**
Chao-Yuan Wu, R Manmatha, Alex Smola, Philipp Krähenbühl
ICCV 2017
- 5 **Doubly Greedy Primal-Dual Coordinate Descent for Sparse Empirical Risk Minimization**
Qi Lei, Ian En-Hsu Yen, Chao-Yuan Wu, Inderjit S Dhillon, Pradeep Ravikumar
ICML 2017
- 4 **Recurrent Recommender Networks**
Chao-Yuan Wu, Amr Ahmed, Alex Beutel, Alex Smola, How Jing
WSDM 2017
- 3 **Predicting Latent Structured Intents from Shopping Queries**
Chao-Yuan Wu, Amr Ahmed, Gowtham Ramani Kumar, Ritendra Datta
WWW 2017
- 2 **Using Navigation to Improve Recommendations in Real-time**
Chao-Yuan Wu, Christopher V Alvino, Alex Smola, Justin Basilico
RecSys 2016
- 1 **Jointly Modeling Aspects, Ratings and Sentiments for Movie Recommendation (JMARS)**
Qiming Diao, Minghui Qiu, Chao-Yuan Wu, Alex Smola, Jing Jiang, Chong Wang
KDD 2014

OTHER PUBLICATIONS

- 4 **Lossless Image Compression through Super-Resolution**
Sheng Cao, Chao-Yuan Wu, Philipp Krähenbühl, *arXiv* 2020

- 3 **Joint Training of Ratings and Reviews with Recurrent Recommender Networks**
Chao-Yuan Wu, Amr Ahmed, Alex Beutel, Alex Smola, *ICLR Workshop* 2017
- 2 **Explaining reviews and ratings with PACO: Poisson Additive Co-Clustering**
Chao-Yuan Wu, Alex Beutel, Amr Ahmed, Alex Smola, *WWW* 2016 (Poster)
- 1 **Spectral Methods for Nonparametric Models**
Hsiao-Yu Fish Tung, Chao-Yuan Wu, Manzil Zaheer, Alex Smola, *arXiv* 2017

TEACHING

- 2019 Fall **CS 342 Neural Networks**
Co-created with Philipp Krähenbühl
- 2019 Fall **Online CS 395T Deep Learning**
Co-created with Philipp Krähenbühl

INVITED TALKS

- 5.12.2020 **University of Bristol**
Visual Information Laboratory Seminar Series (VILSS)
Title: On Efficiently Modeling Videos
- 5.6.2020 **UC Berkeley**
Title: Perception in the Dynamic World
- 4.7.2020 **MIT**
Vision Seminar
Title: On Efficiently Modeling Videos
- 5.10.2017 **Amazon Machine Learning Conference**
Title: Sampling Matters in Deep Embedding Learning.
- 7.28.2015 **Quora Inc.** (host: Dr. Xavier Amatriain)
Title: Joint Modeling of Ratings and Reviews.
- 8.29.2014 **University of Illinois at Urbana-Champaign**
CS591 Seminar: Advanced Topics on Data Mining
Title: Jointly Modeling Aspects, Ratings and Sentiments for Recommendation.
- 10.17.2014 **Netflix Inc.** (host: Dr. Xavier Amatriain)
Title: Joint Modeling of Movie Ratings and Reviews & Spectral Methods.
- 10.20.2014 **Google Inc.** (host: Dr. Sujith Ravi)
Title: Spectral Methods for HDP & Jointly Modeling for Movie Recommendation.

OPEN-SOURCE SOFTWARE

- 2020 A Multigrid Method for Efficiently Training Video Models (PyTorch)
<https://github.com/facebookresearch/SlowFast/tree/master/projects/multigrid>
- 2020 Lossless Image Compression through Super-Resolution (PyTorch)
<https://github.com/caoscott/SReC>
- 2019 Fashion++: Minimal Edits for Outfit Improvement (PyTorch)
<https://github.com/facebookresearch/FashionPlus>
- 2019 Video long-term feature banks (Caffe2)
<https://github.com/facebookresearch/video-long-term-feature-banks>
- 2018 Video Compression through Image Interpolation (PyTorch)
<https://github.com/chaoyuaw/pytorch-vci>

- 2018 CoViAR: action recognition on compressed videos (PyTorch and C++)
<https://github.com/chaoyuaw/pytorch-coviar>
- 2017 Image embedding learning with distance-weighted sampling (MXNet)
https://github.com/chaoyuaw/incubator-mxnet/tree/master/example/gluon/embedding_learning

PRESS COVERAGE

- 2020 Lossless Image Compression through Super-Resolution
- The Next Web
 - <https://thenextweb.com/neural/2020/04/27/researchers-claim-this-ai-model-achieves-better-compression-rates-than-pngs/>
 - Eyerys
 - <https://www.eyerys.com/articles/news/srec-lossless-image-compression-method-using-super-resolution-models>
- 2019 Fashion++: Minimal Edits for Outfit Improvement [ICCV 2019]
- Vogue Business
 - <https://www.voguebusiness.com/technology/facebook-ai-fashion-styling>
 - VentureBeat
 - <https://venturebeat.com/2019/09/18/fashion-uses-ai-to-make-unfashionable-outfits-stylish-with-minimal-tweaks/>
 - Facebook AI Blog
 - <https://ai.facebook.com/blog/building-ai-to-inform-peoples-fashion-choice/>

PROFESSIONAL SERVICE

Journal Reviewer: TPAMI, TIP, TMM
Reviewer: CVPR 2018, 2019, 2020, 2021
Reviewer: ICCV 2019, 2021
Reviewer: ECCV 2018, 2020
Reviewer: NeurIPS 2019, 2020
Reviewer: ICLR 2019, 2020

Last updated: March 29, 2021