

CHENYUN WU

A PhD Candidate Looking for Full-time Computer Vision Research Positions

413-2756290
chenyun@cs.umass.edu
people.cs.umass.edu/~chenyun

EDUCATION

PhD candidate in Computer Science, UMass Amherst	GPA: 4.0/4.0	09/2015 – 09/2021
<ul style="list-style-type: none">• Advised by Prof. Subhansu Maji. Received Computer Science M.S. degree in 05/2018.• Interested in vision and language, video understanding, object detection / segmentation, fine-grained recognition, etc.		
B.S. in Physics, Peking University	GPA: 3.6/4.0	09/2011 – 07/2015
B.S. in Computer Software, Peking University	GPA: 3.7/4.0	09/2012 – 07/2015
Summer undergraduate research in CS department, Carnegie Mellon University		06/2014 – 09/2014

WORK EXPERIENCE

Research intern at ByteDance AI Lab in US	06/2020 – 09/2020
Worked on localizing video clips with natural language descriptions.	
Research intern at Adobe Creative Intelligence Lab	05/2018 – 03/2019
Worked on large-scale visual grounding.	
Software engineering intern at Google Research & Machine Perception Team	06/2017 – 09/2017
Worked on deep image compression using U-Net with TensorFlow.	

RESEARCH EXPERIENCE

Describing Textures using Natural Language [ECCV 2020 Oral]	04/2019 – 03/2020
<ul style="list-style-type: none">• Collected a dataset of natural language descriptions on texture images, capturing fine-grained texture characteristics.• Conducted detailed analysis of classification, metric learning and captioning models, with an emphasis on compositionality.• Explored applications on fine-grained classification and model interpretation.	
PhraseCut: Language-based Image Segmentation in the Wild [CVPR 2020]	05/2018 – 11/2019
<ul style="list-style-type: none">• Collected a large-scale visual grounding dataset of templated phrases and corresponding image segmentation pairs with massive things and stuff categories and explicit attributes and relationship descriptions.• Developed a model that provides unified treatment of both things and stuff and handles long-tail distribution of concepts.	
Reasoning about Fine-grained Attribute Phrases using Reference Games [ICCV 2017]	10/2016 – 07/2017
<ul style="list-style-type: none">• Introduced a data collection framework of describing fine-grained visual differences with free-form attribute phrases.• Trained a speaker (a captioning model) to describe an image out of a pair, and a listener (a joint embedding model for images and phrases) to guess which image is referred to; Evaluated with human study.• Applied the models to fine-grained classification, set-wise descriptions, and image retrieval with natural language.	
Learning to Act for Vision based Geo-localization [Master Thesis]	09/2017 – 05/2018
<ul style="list-style-type: none">• Collected both real-world and synthetic data of images and their locations: adopted SLAM method to improve ground-truth GPS accuracy for camera data; collected Minecraft data in various scenery, weather and daylight.• Implemented a particle filter on top of a neural net to predict locations from a sequence of observations when the agent moves around in the environment; Applied reinforcement learning to plan agent actions to localize itself more efficiently.	
Fine-grained Right Whale Recognition with Region Alignment [Top 10% in Kaggle]	09/2015 – 12/2015
<ul style="list-style-type: none">• Trained an identifier to distinguish 447 right whales with long tail distribution (fewer than 5000 labeled images in total).• Designed and trained an auto-encoder to detect and align the whale's head, followed by a classifier to identify whales.	

PUBLICATIONS

-
- *Describing Textures using Natural Language*. **Chenyun Wu**, Mikayla Timm, Subhansu Maji. Proceedings of the European Conference on Computer Vision (ECCV), 2020. Oral.
 - *PhraseCut: Language-based Image Segmentation in the Wild*. **Chenyun Wu**, Zhe Lin, Scott Cohen, Trung Bui, Subhansu Maji. IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020.
 - *Reasoning about Fine-grained Attribute Phrases using Reference Games*. Jong-Chyi Su*, **Chenyun Wu***, Huaizu Jiang, Subhansu Maji. International Conference on Computer Vision (ICCV), 2017.
 - Two physics papers in 2014: third author on Applied Physics Letters; fifth author on Journal of Optics.

COURSEWORK

-
- **Graduate** (All earned grade A): Computer Vision, Reinforcement Learning, Machine Learning, Artificial Intelligence, Probabilistic Graphical Models, Algorithm, Neural Networks (seminar), Deep Learning (seminar), Software Engineering.
 - **Undergrad**: Database Systems (91), Artificial Intelligence (85), Natural Language Processing (88), Human-Computer Interaction (84), Numerical Methods (86), Compiler Design (92), Operating Systems (92), Functional Programming, etc.

SKILLS

-
- Experienced in Python (PyTorch, TensorFlow); Familiar with Java, Matlab, C++, Linux clusters, web development.