

(Amos) Xinshao Wang

PDRA@University of Oxford. Skilled at Deep Metric Learning, Robust Deep Learning, Semi-supervised Learning, Label Noise, Sample Imbalance.
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EDUCATION

Machine Learning Summer School (MLSS) 2019, 26.08 - 06.09, Moscow, Russia

MLSS is one of the most famous courses about modern methods of statistical machine learning and inference. It presents topics which are at the core of modern machine learning, from fundamentals to state-of-the-art practice. Here are the schedule and event details: <https://mlss2019.skoltech.ru/event-details>.
Queen's University Belfast (QUB), Belfast, Northern Ireland, United Kingdom

- PhD on [Computer Science](#) Sep 2017 – Jun 2020
 - Supervisors: Prof. Neil M. Robertson (Principal) & Dr. Yang Hua (Secondary)
 - Research Interests: Machine Learning (Deep Metric Learning, Robust Representation Learning under Adverse Conditions, e.g., Noisy Data and Sample Imbalance, Semi-supervised Learning, Example Weighting); Computer Vision (Image/Video Recognition, Person Re-identification).

Northwest A&F University (NWAUFU), Yangling, Shaanxi, China

- B.Eng. on Information Engineering, Graduated with College Honors. Sep 2013 – Jul 2017
 - Supervisor: Prof. Cheng Cai
 - Cumulative GPA: 3.86 / 4.00, 92.82 / 100
 - Grade Rank: 1 / 57

RESEARCH EXPERIENCE

Department of Engineering Science, University of Oxford

- Postdoctoral Research Assistant Jun 2020 – Present

AnyVision & Queen's University Belfast

- PhD Researcher Sep 2017 – Jun 2020
 - Deep metric learning: learn discriminative and robust image/video representations for downstream tasks, e.g., image/video retrieval and image/video clustering.
 - Robustness: [robust learning and robust inference in the context of deep learning against noisy labels, noisy observations, outliers, sample imbalance, adversaries, etc.](#) Label noise is directly related to semi-supervised learning.
 - Computer vision: video/set-based person re-identification; image/video classification/retrieval/clustering.

Tencent YouTu Lab

- Machine Learning Intern Feb 2017 – Apr 2017
 - Project: Image super-resolution by deep learning
 - Details: The main goal is to achieve real-time single-image super-resolution on an ordinary CPU with negligible performance drop. In addition, I broadened my horizon and learned some about texture synthesis, style transfer and human segmentation using deep learning during the internship.

Northwest A&F University, Undergraduate Innovation and Research Programme

- Detection and classification of user faces when logging in to security systems Mar 2015 – Apr 2015
 - Supervisor: Prof. Cheng Cai
 - Role: Team leader
 - Details: We implemented a secure login software system which detects and verifies user faces instead of verifying passwords. It was implemented by C# (Core Functions Implementation) and Windows Form (User Interfaces Control). I was responsible for face detection by Emgu.CV, feature extraction using PCANet, face classification by Large Margin Classifier based on affine hulls. I was also responsible for designing the UI of the software system and messages interaction between different interfaces.
- Agricultural species resources classification based on deep learning Oct 2014 – May 2017
 - Supervisor: Prof. Cheng Cai
 - Role: Team leader
 - Details: Study deep learning algorithms and improve them for feature extraction and classification of agricultural species images.

PUBLICATIONS

- [8] Xinshao Wang, Yang Hua, Elyor Kodirov, Neil M. Robertson, “[ProSelfLC: Progressive Self Label Correction for Training Robust Deep Neural Networks](#),” in *arXiv*, 2020. [Webpage](#)
- [7] Xinshao Wang, Elyor Kodirov, Yang Hua, Neil M. Robertson, “[Instance Cross Entropy for Deep Metric Learning](#),” in *arXiv*, 2019.
- [6] Xinshao Wang, Elyor Kodirov, Yang Hua, Neil M. Robertson, “[Derivative Manipulation for General Example Weighting](#),” in *arXiv*, 2019. [Github](#). [Invited Seminar Talk at KAUST](#).

- [5] Xinshao Wang, Yang Hua, Elyor Kodirov, Neil M. Robertson, “[IMAE for Noise-Robust Learning: Mean Absolute Error Does Not Treat Examples Equally and Gradient Magnitude’s Variance Matters](#),” in *arXiv*, 2019. [Github](#) & [Poster](#).
- [4] Xinshao Wang, Yang Hua, Elyor Kodirov, Guosheng Hu, Romain Garnier, Neil M. Robertson, “[Ranked List Loss for Deep Metric Learning](#),” in *CVPR*, 2019 Poster. [Github](#) & [Slide](#) & [Poster](#).
- [3] Xinshao Wang, Yang Hua, Elyor Kodirov, Guosheng Hu, Neil M. Robertson, “[Deep Metric Learning by Online Soft Mining and Class-Aware Attention](#),” in *AAAI*, 2019 Oral. [Github](#) & [Slide](#) & [Poster](#).
- [2] Xinshao Wang, Elyor Kodirov, Yang Hua, Neil M. Robertson, “[ID-aware Quality for Set-based Person Re-identification](#),” in *arXiv*, 2019.
- [1] Xinshao Wang, Cheng, Cai, “[Weed seeds classification based on PCANet deep learning baseline](#),” in *APSIPA*, 2015 Oral.

AWARDS & SCHOLARSHIPS

- University Special Research Scholarship, sponsored by AnyVision Oct 2017 – Sep 2020
It covers full international tuition fees and living expenses.
- China National Scholarship ×3, awarded by China’s Ministry of Education May 2013– May 2016
This is the highest level scholarship and annually awards outstanding full-time undergraduates except freshmen. I got this great honour every year.
- First-class Professional Scholarship ×3, awarded by NWAUFU May 2013– May 2016
This scholarship awards undergraduates who rank first in terms of GPA.
- Merit Student ×3, awarded by NWAUFU May 2013– May 2016
This awards undergraduates whose comprehensive performance is outstanding.

LANGUAGES

- Chinese: Native language
- English: Fluent

SKILLS

Caffe, C++, MATLAB, TensorFlow, MXNet, Python.

INTERESTS

basketball, swimming, table tennis, pooling, cycling.

REFERENCES (PLEASE LET ME KNOW IF YOU WOULD LIKE TO CONTACT THEM)

- **Professor Neil M. Robertson**
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- **Dr Elyor Kodirov**
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