Xinshao Wang (Amos)

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EDUCATION

Machine Learning Summer School 2019, 26.08 - 06.09, Moscow, Russia
Machine Learning Summer School (MLSS) is a course 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 in 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); Computer Vision (Image/Video Recognition, Person Re-identification).

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

- B.Eng. in 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

AnyVision & Queen's University Belfast

- PhD Researcher — Sep 2017 – Present
  - 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.
  - 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

[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.

[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. 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 $\times 3$, 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 $\times 3$, awarded by NWAFU — May 2013– May 2016
  This scholarship awards undergraduates who rank first in terms of GPA.
- Merit Student $\times 3$, awarded by NWAFU — 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**
  Professor of School of Electronics, Electrical Engineering and Computer Science (EEECS) & Institute of Electronics, Communications & Information Technology (ECIT), QUB
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- **Dr Yang Hua**
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- **Dr Elyor Kodirov**
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