Hangwei Qian

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Education

Nanyang Technological University (NTU), Singapore 2015.08 -- now

PhD candidate in School of Computer Science and Engineering, LILY Research Center, IGS
GPA:4.88/5, Advisor: Prof. Sinno Jialin Pan

University of Science and Technology of China (USTC), China 2011.09 -- 2015.06

B.Eng. in Department of Electronic Engineering and Information Science
GPA: 3.6/4.3 (86/100), Advisor: Prof. Ming Zhu

Leibniz University Hannover, Germany 2015.01 -- 2015.05

Research Assistant in TNT institute for Information, Advisor: Alina Kuznetsova

Research Interests

Machine Learning, Kernel Methods, Human Activity Recognition

Research Experience

Domain Generalization for Personalized Activity Recognition 2019.03 -- Present

- To design a novel mechanism to capture the transferability of existing deep learning model to tackle the inter-class and inter-person variance problem.

Distribution-Embedded Neural Network on Activity Recognition 2018.11 -- 2019.02

- Designed a unified end-to-end neural network DDNN to learn meaningful features including statistical, temporal and spatial correlation features for activity recognition in an automated fashion.
- Key result: **Hangwei Qian**, Sinno Jialin Pan, Bingshui Da and Chunyan Miao: A Novel Distribution-Embedded Neural Network for Sensor-Based Activity Recognition, ***IJCAI*, 2019**.

Weakly-Supervised Learning for Activity Segmentation and Recognition 2018.04 -- 2018.10

- Modeled weakly-supervised segmentation problem of activity data as a non-convex optimization problem.
- Proposed an iterative kernel-based method to jointly segment sensor streams and extract sufficient statistical features for classification.
- Key result: A Unified Framework for Sensor-based Activity Segmentation and Infinite Feature Extraction via Learning from Distributions , submitted to *Artificial Intelligence Journal*, 2018.

Semi-Supervised Learning for Activity Recognition 2017.09 -- 2018.03

- Proposed DSSL to alleviate the label annotation effort for activity recognition, which is capable of exploiting unlabeled instances to learn underlying data manifolds.
- We provided theoretical analysis, proving that DSSL is valid in a reproducing kernel Hilbert space.
- Key result: **Hangwei Qian**, Sinno Jialin Pan, and Chunyan Miao, Distribution-based Semi-Supervised Learning for Activity Recognition, ***AAAI*, 2019 (Oral)**.

Large-Scale Sensor-based Activity Recognition 2016.02 -- 2017.08

- Proposed a novel feature learning method SMM$_{AR}$ to learn all orders of statistical moments features implicitly and automatically via kernel mean embedding of distributions.
- Proposed an efficient accelerated method R-SMM$_{AR}$ to extract explicit features to scale up SMM$_{AR}$ by Random Fourier Features.
- Key result: **Hangwei Qian**, Sinno Jialin Pan, and Chunyan Miao: Sensor-based Activity Recognition via Learning from Distributions, ***AAAI*, 2018 (Oral)**.

Invited Talks

Activity Recognition with Kernel Methods 2019.01

Invited by Alibaba-NTU Joint Research Institute, Singapore.

Transfer Learning: An Overview. 2017.07

Invited by United Overseas Bank (UOB) Group Wholesale Banking Data Management Office, Singapore.

Skills

- Programming Languages: Python, Matlab, C/C++, R, LaTeX, SQL
- Operating Systems: Linux, Windows, Mac
- Deep Learning Frameworks: PyTorch, TensorFlow, Keras
- Language: English (fluent), Mandarin (native)

Honors and Awards

WiEST Conference Grant, NTU	2019
AAAI Student Travel Grant, AAAI Volunteer Award	2019, 2018
NTU PhD Scholarship	2015 -- 2019
Outstanding Student Scholarship, USTC	2015, 2014, 2012
Excellent Volunteers, China Foundation For Poverty Alleviation	2013