Yushi LAN

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EDUCATION

School of Software, Beijing University of Posts and Telecommunications (BUPT) *08/2016-Present*
B.E. in Software Engineering, Overall GPA: 87.5/100, Major GPA：88/100, Rank 10/127

YePeiDa Innovation College, Beijing University of Posts and Telecommunications *03/2018 -06/2019*
Elite Selection and Development Plan (top 1% of 3600 undergraduates)

Wolfson College, University of Cambridge *08/2018*
BUPT - Cambridge University exchange program (Top 1% of 3600 undergraduates)

PUBLICATIONS & PATENT

Yushi Lan, Yuan Liu, Maoqing Tian and Hongsheng Li, "MagnifierNet: Towards Semantic Regularization and Fusion for Person Re-identification", submitted to ***IEEE Conference on Computer Vision and Pattern Recognition (CVPR)***, Nov 2019.

Patent Number: ZL 201910741663.1 "A base station height measurement method, electrical equipment and storage medium". Author: **Yushi Lan**, 2019.

RESEARCH EXPERIENCE

Deep Learning to Segment Cell and Tissue Microscopy
University of Texas at Austin | Research Assistant *07/2019 -11/2019*
Advisor: Chandrajit Bajaj, professor at Department of Computer Science, Computational Visualization Center, UT Austin

- Aimed to accurately segment microscopy organelles slides, which has been a highly challenging yet rewarding task.
- Analyzed the distribution and size variation of organelles based on microscopy slide; established the pipeline for training, testing and evaluation; implemented encoder-decoder segmentation networks and attention modules with PyTorch.
- Proposed to combine Neural-ODE with hierarchical segmentation architecture to boost performance; Composed *Hierarchical ResUnet for Semantic Segmentation* paper as co-first author; our code is available on GitHub.

Enhancing Person Representation Learning by Semantic Fusion and Regularization
SenseTime Research Beijing | Research Intern *03/2019-11/2019*
Advisor: Hongsheng Li, assistant professor at Department of Electronic Engineering, Multimedia Laboratory, CUHK

- Aimed to magnify local features in person re-identification (ReID) task; added semantic recognition branches after backbone network; our CNN model showed improved generalization ability under cross-domain settings on million scale datasets.
- Proposed *Semantic Regularization Branch* and *Semantic Fusion Branch*, which boosted the performance of person representation learning; the proposed modules can help distinguish visually similar identities and identify occluded people.
- Composed *MagnifierNet* paper as the first author and achieved state-of-the-art results on 4 benchmarks by large margins; the paper was submitted to CVPR 2020.

Efficient Optimization of Graph Convolution Network on Large Graphs
Microsoft Research Asia | Research Intern *11/2019-Present*
Advisor: Hui Xue, assistant researcher at System Research Group, MSRA

- Researched optimization acceleration on large-scale GCNs training.
- Improved the graph batch sampling strategy by utilizing pre-defined category information and generated better partitions of nodes with higher intra-class compactness.

CV aided Cardiomyopathy Pathological Classification
Tsinghua University | Research Assistant *10/2018-Present*
Advisor: Hairong Lv, assistant professor at Department of Automation, Tsinghua University

- Aimed to classify cardiomyopathy by digital pathological analysis rather than through observation and provided references for future pathological diagnosis.
- Analyzed large quantities of RCM (Restrictive Cardiomyopathy) pathological stained (H&E, MASSON) slides using computer vision algorithms; extracted valuable features and performed correlation analysis and unsupervised clusters based on the results.

- Implemented a GUI system independently that could read, process, and analyze pathological slides in parallel; extracted cardio features and statistical information that could be directly saved in csv format for later use.
- This research can aid doctors to efficiently classify and diagnose cardiomyopathy with over 85% accuracy.

Community Detection with Dynamic Graph Convolution Networks

BUPT | Research Assistant *10/2019-Present*

Advisor: Advisor: Yingxia Shao, assistant professor at Department of Computer Science, BUPT

- Researched on the End-to-End overlapping community detection with dynamic evolution. Traditional methods have inherent drawback to discover overlapping community and neural models for community detection has received little attention.
- Adopted GCN to extract community graph embedding and recurrent model to capture the dynamism of graph sequence; implemented dynamic graph convolution networks with PyTorch, and then evaluated them on public graph datasets.
- Proposed mini-batch stochastic optimization strategy which reduced computational cost and memory use.

PROJECT EXPERIENCE

An Implementation of Deep Learning Framework with C#

BUPT | Team Leader *12/2018-01/2019*

Course: C# Programming (Only Full score out of all undergraduates)

- Implemented a Deep Learning Framework using C# which builds and trains artificial neural network in PyTorch API.
- Supports auto differentiation for popular activation function, matrix calculation and loss functions.
- Code available here on GitHub.

End-to-End Person Re-identification (ReID) System Development

BUPT | Team Member *09/2017-06/2019*

Innovation and Entrepreneurship Training Program

- Built an end-to-end person re-identification (ReID) system that supported efficient retrieval and distributed deployment
- Goal is to help enterprises better understand their customers' needs by tracking consumer behavior
- Code available here on GitHub.

PROFESSIONAL EXPERIENCE

China Unicom Xiongan Industrial Internet Co Ltd

Department of Network | Summer Intern *07/2018-09/2018*

- Engaged in the maintenance of Base Station and Clusters; ensured the stable operation of the carrier communication system.
- Aided experts in improving the measurement of base station height; the proposed new method will significantly improve the accuracy and reduce the difficulty of measurements.

HONORS & AWARDS

Academic Outstanding Scholarship, Top 6% of BUPT for 3 consecutive years *2016-2019*

National Award, BUPT Undergraduate Research Innovative Projects (top 2%) *2019*

Finalist, China College Student's Innovation Competition (top 5%) *2018*

Scholarship, Ansheng.WANG Foundation Elite Award (top %5) *2017*

SKILLS

Programming Languages: Python, C/C++/C#, Linux, Java, Django, JavaScript, SQL

Machine Learning Frameworks: PyTorch, Numpy, SciPy, OpenCV, Hadoop

Professional Software: LaTeX, MATLAB, VS/VS Code