Yushi **LAN**

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Education

Beijing University of Posts and Telecommunications(BUPT)

Beijing, China

B.E. in Software Engineering, Institute of Software

Aug. 2016 - PRESENT

- Major GPA: 3.85/4.0, Overall GPA: 3.80/4.0
- ***Course Highlights:*** Advanced Mathematics(93), Discrete mathematics(90), Data Mining(93), Distributed Computing(90), Computer Networks(92), Algorithms and Data Structure(89, top3 in class), Electronic Commerce(94), Python Programming(90), C# Programming(100, first in class), Programming Practice with C/C++(96, first in class), Domain-Oriented Practice(98, first in class)

YePeiDa Innovation College, BUPT

Beijing, China

Elite Selection and Development program(Top 1% among 3600 undergraduates)

Mar. 2018 - June. 2019

- Specialized in pattern recognition, invasion detection and data mining research in industry 4.0 field

Wolfson College, University of Cambridge

Cambridge, United Kingdom

BUPT - Cambridge Exchange Program, (top 36 among 3600 undergraduates)

Aug. 2018 summer

RESEARCHES

Deep Learning to Segment Cell and Tissue Microscopy | Research assistant

U.S.A

Advised by **Prof. Chandrajit Bajaj, CVC Lab, The University of Texas at Austin**

July. 2019 - Oct.

- Visualized and analyzed the distribution, size variation of organelles based on microscopy slides, wrote detailed documentation and applied necessary preprocessing to build datasets for training.
- Implemented U-Net with several encoder networks and spatial attention module with PyTorch, applied deep network on generated microscopy datasets, and added organelle statistical distribution as extra supervision.
- Tried to combined Augmented Neural-ODE with our segmentation network, to ease detail lost and memory cost.

CV aided Cardiomyopathy Pathological Classification | Research Assistant

Beijing

Advised by **Assistant Prof. Hairong LV, National Laboratory of Information, Tsinghua University**

Oct. 2018 - PRESENT

- Analyzed large quantities of RCM (Restrictive Cardiomyopathy) pathological slides using computer vision techniques, extracted valuable hand-crafted features and made correlation analysis based on the result.
- Implemented a GUI system independently that can read, process and analyze pathological slides in parallel. Extracted cardio features and statistical information can be directly saved to excel for later use .
- This research can aid doctors to efficiently classify and diagnose cardiomyopathy with over 85% accuracy.

Dynamic Graph Convolution Networks Discovery | Research Assistant

Beijing

Advised by **Assistant Prof. Yingxia Shao, Intelligent Data Management Group, BUPT**

Sept. 2019 - PRESENT

- Conducted research on the theory and development of graph convolution networks, read papers and related materials. Collected related dataset for training and evaluation.
- Implemented different types of dynamic graph convolution network with PyTorch, and then evaluated them on popular sequence dataset. We combined graph convolution with recurrent model to capture the dynamism of graph sequence.
- Our project and code are available on GitHub

PROFESSIONAL

SenseTime Group Ltd, Research Institute

Beijing, China

Computer Vision Research Intern

March. 2019 - PRESENT

- Conducted researches on person re-identification, especially focused on solving body misalignment and domain adaptation problem with part-based and semantic-aided CNN models. Our research and model supported ten million level person classification and retrieval with high mean average precision.
- Adjusted and improved CNN model by adding pedestrian segmentation and attributes prediction branches, trained on million scale datasets and achieved evident performance improvement.
- Applied segmentation mask to a new prediction branch, dynamically mask pedestrian semantic feature map after layer4 of Resnet, further improve the robust feature representation learning compared to *Batch DropBlock Network*.

China Unicom Xiongan Industrial Internet Co Ltd, Internet Department *Xiongan, China*

Summer Intern *July. 2018 - Sept. 2018*

- Engaged in the maintenance of communication based station and server cluster, assured the stable operation of carrier communication system.
- Aided the experts to improve the measurement of base station height. The proposed new method can significantly improve the accuracy and reduce the difficulty of measurement.
- Contributed to the patent application regarding this research. Our application was recently accepted: Patent Number: ZL 201910741663.1 "A base station height measurement method, electrical equipment and storage medium"

PROJECTS

End-to-End Person Re-identification System Development ***BUPT**, Institute of Software*

Core Member, advised by Prof. Guoshi WU *Sept. 2017 - June. 2019*

- Designed and adjusted convolution neutral network structure based on ResNet-50 and fine-tuned our model on several datasets to minimize domain gap. Achieved 91% Top1-Acc on Market1501 Dataset.
- Implemented an distributed system that supported media upload, person search and tracking, anomaly detection and correlation analysis. This application can help enterprises analyze their customer's interests to increase sales, and has already been deployed.
- Code available here on GitHub.

Public Traffic Monitor and Stream Prediction System ***BUPT**, Institute of Software*

Team Leader, advised by Prof. Ansheng WANG *Apr. 2019 - July.*

- Implemented a stream monitor and prediction framework template that can be applied to any city and public traffic, supported stream monitor, sequence prediction, user profile management and navigation etc. This application is built with Vue.js and Echarts.
- Code available here on GitHub

An Implementation of Deep Learning Framework with C# ***BUPT**, Institute of Software*

Team Leader *Dec. 2018 - Jan. 2019*

- Implemented a Neutral Network Framework using C# which can build and train artificial neural network in PyTorch way, supported both classification and regression. This project is a suitable tutorial for introduction to basic deep learning theory.
- Code available here on GitHub

Casual Game *LinkLink* Development ***BUPT**, Institute of Software*

Team Leader *Sept. 2017*

- Led all aspects of programming of the casual game *LinkLink*, programmed linking animation and drop effect with object oriented development; successfully integrated all animation and models into the game on time.
- Quickly learned and developed on a new GUI framework(Qt); suggested improvements by designing and implementing new systems or modifying existing systems whenever necessary; managed workload and time autonomously to deliver to schedule.
- Built flexible UI framework and supported multi-function options in the games. Player can set game difficulty, background image and music as they like.

Professional skills

Programming Python, C/C++/C#, Matlab, Linux, Ubuntu, Java, HTML, JavaScript, SQL, LaTeX
Framework PyTorch, Numpy, SciPy, OpenCV, Hadoop
Languages Chinese(native), English
Tofel 102 (Reading 23, Listening 26, Speaking 25, Writing 28)
GRE 324 (Verbal 154, Quant 170, Writing 3.5)

Honors & Awards

2016-2019 **Academic Outstanding Scholarship,** Top 6% of BUPT for 3 consecutive years *Beijing, China*
2019 **National Award,** BUPT Undergraduate Research Innovative Projects (top 2%) *Beijing, China*
2018 **Finalist,** China College Student's Innovation Competition(top 5%) *Beijing, China*
2017 **Scholarship,** Ansheng.WANG Foundation Elite Award(top %5) *Beijing, China*