Chuanyang Zheng

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EDUCATION

2017.09-Present	Hong Kong Baptist University
	Undergraduate
	B.SC in Computer Science
	Major GPA: 3.87 (First Honor)

EDUCATION

C.V. Starr Scholarship (20,000 HKD)	**2020**
Outstanding Student Scholarship (6,000 HKD)	2019
Summer Research Scholarship (8,000 HKD)	2019
Nominated to Visit McGill University (2 students of the department; 100,000 HKD)	**2019**
Undergraduate Scholarship in Computer Science (12,000 HKD)	2018
President's Honour Roll	2017 semester 2-Now
Dean's List	2017 Semester 1

PUBLICATION

1. Qikun Zhang, Yongjiao Li, Yong Gan, **Chuanyang Zheng**, Xiangyang Luo, Jun Zheng. (2019). Group Key Agreement Protocol Based on Privacy Protection and Attribute Authentication. *IEEE Access*, 7, 87085-87096

2. Qikun Zhang, Yongjiao Li, **Chuanyang Zheng**, Liang Zhu, Junling Yuan, Sikang Hu. (2020). A permission-combination scalable access control model for Internet of things. *Transactions on Emerging Telecommunications Technologies*, e4060

3.. Yulong Pei, Cong Liu, **Chuanyang Zheng**, Long Chen. (2020). Nonnegative Residual Matrix Factorization for Community Detection. In *International Conference on Web Information Systems Engineering* (pp. 196-209). Springer, Cham.

RESEARCH EXPERIENCE

Repetitive prediction and center loss for knowledge graph embedding   **Oct 2020 – Jan 2021**

Advisor: Lei Chen (Chair Professor, Hong Kong University Of Science And Technology)

- We add repetitive prediction and center loss for knowledge graph embedding, which improves the performance. After using the Dropout operation, we may get the different outputs through the input is the same. To improve the model's ability to extract features, we repeatedly use the model to calculate the prediction of the input, and we use the center loss to push the predictions close to each other. Our baseline is the InteractE(AAAI 2020). Our model should be the best CNN based knowledge graph embedding based methods. [Final Report]

Image To Image Translation   **Jun 2020 – Sep 2020**

Advisor: Pong Chi Yuen (Associate Dean of Science and Chair Professor, Hong Kong Baptist University)

- Originally cycle-consistency constraint only uses L1 loss. Therefore, it only evaluates the results on pixel level but does not include the feature level. Hence, we add a feature match constraint to the generated image. The baseline is the CycleGAN. We evaluated the training result on the horse2zebra dataset by FID score. According to the score, the performance is better than the original model. One more idea will be added in the future. We provide the corresponding code on Github. **Baseline FID: 65.2247 Ours:54.3173** [Code]

Liver Lesion Detection   Jan 2020 – Jun 2020

Advisor: Pong Chi Yuen (Associate Dean of Science and Chair Professor, Hong Kong Baptist University)

- Work on Faster R-CNN. Object: given liver lesion images, find the lesion. It is an object detection task.
- Two Improvement. First (Preprocess), outside the liver, CT images have a lot of useless pixels in which the pixel value is 0. We use a simple traditional algorithm to find the liver in an image before giving it to Faster R-CNN. Second (New FPN), we add ResNet and DenseNet idea to Feature Pyramid Network.
- **Baseline (Faster R-CNN): 61.92% Proposed Model:69.28%**
- Report. [Initial Report] [Final Report]

Multiple-CycleGAN   Oct 2019 – Dec 2019

Advisor: CHEUNG, Yiu-ming(IEEE Follow, Professor, Hong Kong Baptist University)

- Work on CycleGAN. Develop Multiple-CycleGAN. [Final Report]
- CycleGAN only cycles once. According to Squeeze Theorem, we add additional cycles by regards cycle-consistent images as real images. There are two advantages compared to the original CycleGAN. First, according to Squeeze Theorem, the cycle-consistent should be much closer to the original real images. Second, we can get more images as input because we regard cycle-consistent images as real images

GAN based data augmentation for Person Re-identification   May 2019 – Sep 2019

Advisor: Mang Ye (Professor, Wuhan University)

- Work on cross-modality person re-identification. Leveraging cycleGAN for data augmentation. By our method, given N images, we can use 4*N images by generated identity images, fake images, and cycle-consistent images. By using the method and add the triple loss, our model improves by 50%. Therefore, we have the confidence to say that our methods are useful and powerful. The corresponding report is the blow.
- **Baseline:46.8%   Ours:66.78%** [Final Report]

MAJOR COURSE

MATH1005 Calculus	A	COMP1005 Essene of Computing	A-
MATH 2005 Calculus, Probability, and Statistics for Computer Science	A-	MATH1205 Discrete Mathematics	A
COMP2007 Object Oriented Programming	A-	COMP2206 Computer Organization	A
MATH2207 Linear Algebra	DT	COMP2215 Data structure and algorithms	A
COMP2216 Database Management(A)	A	COMP2217 Operating System	A
COMP3015 Data communication and Networking	DT	COMP3047 Software Engineering	DT
COMP4015 Artificial Intelligence and Machine Learning	DT	COMP4055 Medical Image And Its Application	A

SKILLS & INTEREST

Programming Languages: Python, Java, HTML/CSS/JavaScript,

Frameworks & Databases: PyTorch, TensorFlow, Keras, MySQL.