Zechen **Bai**

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A master student of Computer Science at UCAS looking for an internship opportunity.

EDUCATION

University of Chinese Academy of Sciences (UCAS) — Beijing, China
Master candidate of Computer Science at Institute of Software — *June 2022*

University of Science and Technology Beijing (USTB) — Beijing, China
Bachelor of Engineering in Computer Science and Technology — *June 2019*
Overall Score: 91.88/100 | Rank: 7/159

National Taipei University of Technology(NTUT), sponsored exchange program — Taipei, China
Overall Score: 94.85/100 — *Fall 2018*

PUBLICATIONS *(*Equal Contribution)*

- Li Wang*, **Zechen Bai***, Yonghua Zhang, Hongtao Lu. "Show, Recall, and Tell: Image Captioning with Recall Mechanism", accepted by *The Thirty-Fourth AAAI Conference on Artificial Intelligence **(AAAI-20)***.

INTERNSHIP EXPERIENCE

Research Intern, AI Lab, ByteDance — Beijing, China
In Visual Search Team under supervision of director Yonghua Zhang — Feb 2019 – Aug 2019

- Devised, implemented and deployed an object grounded Image-Text matching model for image retrieve task. It's based on the Siamese network and the SOTA method of object detection. Attention mechanism and triplet hard negative mining are introduced. It has been deployed to Toutiao, providing an objects grounded ranking score for Toutiao image retrieving.
- Proposed a novel and robust Image Captioning method based on recall mechanism, which achieves state-of-the-art performance on MSCOCO dataset and online evaluation. This work has been accepted by AAAI-2020.
- Devised a semi-supervised similar image retrieving approach and a cluster-based recall strategy for retrieving. Integrating classification loss, triplet loss and unsupervised loss, the approach is feasible to handling dataset with unbalance distribution. It has been deployed to the TikTok app, presented as a new feature called 'ShiTu'.

Algorithm Engineer Intern, Infimind Tech — Beijing, China
Fine-grained image classification in fashion field — Oct 2018 – Dec 2018

- Applying Computer Vision to clothing attributes labeling, such as collar, sleeve, which can be widely used in clothing retrieving and other fashion fields.
- Implemented a model based on Keras and TensorFlow, which ensembled multi backbones include VGG, DenseNet, etc. Carefully designed loss function, data augmentation, attention mechanism and multi-task learning are introduced to boost the performance. It achieves the max accuracy 90+% of single attribute and the average accuracy 85% of multi-attributes on the e-commerce clothing test set.

System Engineer Intern, Core System Team, Douban — Beijing, China
Participated in the development of distributed computing framework Dpark. — Jan 2018 – Mar 2018

- Developed and tested the TFRecords RDD, a flexible distributed data set. Deeply understood the TFRecords format details in computer memory. Designed an algorithm to split its sequential data precisely while making CRC32 check as efficient as possible.
- Optimized GZip RDD, decoupling the decompression and splitting process, adopting them to a cascade fashion. The part of the code has been pulled to Dpark repository master branch.

CAMPUS ACTIVITIES

- Key member of the 'LIZHI' program, alumni joint advising program — May 2018 - June 2019
- Beijing-HongKong Youth Leadership Summer Camp — July 2017
- C/C++ language student lecture hired by USTB — Sep 2016 - June 2019

HONORS AND AWARDS

June 2019 Outstanding Graduate granted by Beijing Government
May 2017 SCCE Light - the Youth Outstanding Honor granted by SCCE, USTB
May 2017 China Undergraduates Computer Design Competition, *2nd prize in Beijing district*
2015 - 2018 The People's Scholarship granted by USTB (< 5%, 4 times)

SKILLS

Languages: **Python**, **C/C++**, Shell, Java, SQL, LaTeX, Markdown, Verilog, Matlab.
Frameworks/Tools: **Keras**, **PyTorch**, **TensorFlow**, Linux, Thrift, Git, Hadoop, Web Scraping.
Machine Learning: **Deep Learning**, **Computer Vision**, Visual Search, Representation Learning, Image Caption.