Wenyuan Xue

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EDUCATION

Ph.D. Candidate	Computer Science and Technology, Beijing Jiaotong University Beijing, China, 2015-Present
B.S.	Software Engineering, Shanxi University, Taiyuan, China, 2011-2015

RESEARCH EXPERIENCES

2015-Present   Advisor: Professor Qingyong Li

Information Extraction from Images of Medical Laboratory Reports (Principal Investigator)

Medical laboratory report is one kind of important clinical data, which can help doctors trace the patients' condition and make a diagnosis. As the student leader of my group, *I organized and participated in all stages of the project from data annotation to experimental design.*

- The text detector applies Faster RCNN with a patch-based strategy.
- The recognizer uses a concatenation structure to combine two adjacent convolutional features.

OCR for Financial Documents

Audit work is tedious for the finance department, especially in big companies. The aim of this project is to help auditor input financial information from images of documents. This project is in progress and *my work is to propose effective algorithmic solutions.*

AI Based RFID Localization Technique for Automatic Dispatch System

The receiver in the dispatch system can sniff several RFID signals from different products on the conveyor belt. The goal of the project is to arrange received signals by the order of products on the belt. *I was responsible for the algorithm optimization to detect the landmark for a given signal.*

- A neural network is designed to regress the landmark position for a signal, which could be complex by traditional signal processing methods.

I also participated in other projects about object detection, signal recognition and so on.

HONORS AND AWARDS

2018-Nov.	The First Prize Scholarship for Doctoral Students, Beijing Jiaotong University
2015-Dec.	National Scholarship for Graduate Students, Beijing Jiaotong University
2011-2015	Outstanding Graduate, and scholarship, Shanxi University

PUBLICATIONS

Conference

2019   W. Xue, Q. Li, D. Tao. "ReS^{2}TIM: Reconstruct Syntactic Structure from Table Images." *The 15th International Conference on Document Analysis and Recognition (ICDAR)*, 2019. (Accepted)

2018   W. Xue, Q. Li, Z. Zhang, Y. Zhao and H. Wang. "Table Analysis and Information Extraction for Medical Laboratory Reports." *IEEE Fourth International Conference on Cyber Science and Technology*, 2018, pp. 193-199.

2018   Y. Zhao, W. Xue and Q. Li. "A Multi-Scale CRNN Model for Chinese Papery Medical Document Recognition." *IEEE Fourth International Conference on Multimedia Big Data (BigMM)*, 2018, pp. 1-5.

Manuscripts in Preparation

2019   W. Xue, Q. Li and Q. Xue. "Textual Information Extraction from Images of Medical Laboratory Reports with Deep-Learning-Based Approach." Submitted: *Artificial Intelligence in Medicine* (Under Review).

ACADEMIC SERVICES

2018   Reviewer of IEEE Wireless Communications and Networking Conference (IEEE WCNC 2019).

SKILLS AND METHODS

Computer Vision

Digital image processing (OpenCV), object detection (RCNN series, YOLO series), text detection (TextBoxes, CTPN, EAST, R^{2}CNN, etc), text recognition (CRNN, ASTER, Attention based methods, etc)

Programming

Python and C++ are more commonly used.

LANGUAGE

English   Fluent in reading and writing; moderate in speaking

Chinese   Native language