Ruiying Liu

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EDUCATION

M.E. student in Pattern Recongnition and Intelligent Systems (recommended) *2019.08 -Present*
Xiamen University (XMU) , Xiamen, China Supervisor: Prof. Yifeng Zeng
Overall GPA: 3.7/4.0

B.E. in Automation *2015.09 -2019.06*
Xiamen University (XMU), Xiamen, China
Overall GPA: 3.52/4.0

RESEARCH EXPERIENCES

Master Research Project *2020.10 -Present*
Currently focus on multimodal document image layout analysis which aims to detect elements like titles, tables, etc.

- Extends from proposal-based detector Faster-RCNN, uses MMDetection
- Generates language feature presentation using OCR Engine and FastText, and conducts visual and language feature fusion with CNN
- Inspired from the special properties of document, integrates binarization and extracted connected components into RPN to get more refined proposals

Cooperation Project *2019.10 -2021.03*
Implemented algorithm to detect specific components on exam papers and recognise answer sheets

- Utilised connected component analysis and morphological transform
- Has been applied in an auto-marking software provided by the cooperated company
- Has been published in ICCSE, 2021.

Bachelor Thesis *2018.10 -2019.05*
Layout Analysis of Document Photos Based on OpenCV Library

- Segments text areas of workbook photos based on traditional digital image processing

PUBLICATION

R. Liu, S. Yu, F. Yang, Y. Pan, Y. Zeng, A Connected Components Based Layout Analysis Approach for Educational Documents, the 15th International Conference on Computer Science and Education (ICCSE), IEEE, 2021.

SKILLS

- Language: Native in Chinese, Fluent in English (IELTS 7)
- Programming Language: Python, C#, JAVA, MATLAB
- Tools: OpenCV, PyTorch, NumPy, LaTeX

AWARDS AND HONOURS

- Academic scholarships of Xiamen University *2019-2021*
- 2nd prize in the China University Robot Competition (ROBOCON-China) *2018.07*
- 1st prize in the National College Students Mechanical Innovation Design Competition *2018.05*
- National Encouragement Scholarship *2015-2016, 2017-2018*
- Merit Student of Xiamen University *2015-2016*