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 INTERESTS

- **Deep Learning for Computer Vision**: Object Detection, Semantic Segmentation, OCR
- **Digital Image Processing**: Image Transformation, Feature Extraction
- **Multimodal Learning**: Visual-Language Tasks, Feature Fusion

RESEARCH EXPERIENCES

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

- Extends from proposal-based detector Faster-RCNN and improves proposal generation
- Combines visual and language (recognised by OCR Engine) features

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

- Utilised connected component analysis
- Has been applied in an auto-marking software provided by the cooperated company

Undergraduate Research Project *2018.10 -2019.05*
Segmented text area of workbook photos based on the OpenCV library

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

- 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*