Heng **ZHANG**

Deep learning R&D Engineer

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"Maximum effort!"

Summary

I am a PhD student in LACODAM team at INRIA Rennes laboratory, in France. I am working under the supervision of Prof. Elisa FROMONT and Prof. Sebastien LEFEVRE. In the same time, I work as a Deep learning R&D Engineer in ATERMES, Paris area. My current research interest is deep learning for multispectral object detection, small object detection and video object detection.

Work Experience

ATERMES — *Paris area, France*

Deep learning R&D Engineer — *Dec. 2018 - now*

- Built Deep Learning models for accurate object detection (car, pedestrian, bicycle, etc) at long distance (>3km).
- Fusing information from multiple sensors (thermal camera & visible camera) to improve the detection precision.
- Model inference acceleration for efficient deep learning applications on embedded systems.

Hubert Curien laboratory — *Saint-étienne, France*

Apprenticeship — *Sep. 2017 - Oct. 2018*

- Implement different deep learning models for face/person detection in public transport (bus, tramway, subway, etc).
- Proposed efficient video object detection methods for video surveillance applications.

Education

INRIA Rennes — *Rennes, France*

PhD student in Deep Learning and Computer Vision — *Oct. 2018 - now*

- Industry-oriented PhD program, cooperation with ATERMES company.

Télécom Saint-étienne — *Saint-étienne, France*

Engineer's degree in Computer Vision and Image Processing — *Sep. 2015 - Jun. 2018*

- One-year Apprenticeship in Hubert Curien laboratory.

Xidian University — *Xi'an, China*

Bachelor's degree in Computer Science and Engineering — *Sep. 2012 - Jun. 2016*

Publications

Multispectral Fusion For Object Detection With Cyclic Fuse-and-refine Blocks [pdf] — *Abu Dhabi, United Arab Emirates*

27th IEEE International Conference on Image Processing (ICIP2020) — *Oct. 2020*

- We propose a new feature fusion method for neural networks that leverages the complementary/consistency balance existing in multispectral features by adding to the network architecture, a particular module that cyclically fuses and refines each spectral feature. We obtain state-of-the-art results on KAIST Multispectral pedestrian detection benchmark.

Improving video object detection by Seq-Bbox Matching [pdf] — *Prague, Czech Republic*

14th International Conference on Computer Vision Theory and Applications (VISAPP2019) — *Feb. 2019*

- We propose a novel and highly effective box-level post-processing method to improve the accuracy of video object detection. The proposed method can be applied to online/offline detection. It achieves state-of-the-art performance on ImageNet VID dataset.

Languages

- **English**, Professional working proficiency (TOEIC 865);
- **French**, Professional working proficiency;
- **Chinese**, Native language.