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科学研究費助成事業（学術研究助成基金助成金）実施状況報告書（研究実施状況報告書）（平成 27 年度）

1. 機関番号

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 2. 研究機関名 奈良先端科学技術大学院大学
3. 研究種目名 若手研究(B) 4. 補助事業期間 平成 27 年度 ~ 平成 29 年度

5. 課題番号

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6. 研究課題名 Fast, effective and robust person re-identification for large-scale real applications

7. 研究代表者

研究者番号	研究代表者名	所属部局名	職名
3 0 7 5 0 5 5 9	ウヤン 伍洋	研究推進機構	助教

8. 研究分担者

研究者番号	研究分担者名	所属研究機関名・部局名	職名

9. 研究実績の概要

We published 1 international journal paper and 2 international conference papers which are related to this project.

In the international journal paper entitled "Locality based discriminative measure for multiple-shot human re-identification", we proposed a new set-to-set dissimilarity which cares about both majorities and minorities of samples in the set pairs, and explored a local metric field to make the best use of such a dissimilarity for combining locality and metric learning for set-based re-identification. This work is an important component for the whole proposed model.

In the two international conference papers, we investigated hierarchical feature learning and its combination with deep features from convolutional neural networks. This is a new direction that we have explored for borrowing the latest progress from deep learning to enhance our proposed model. The two papers are just some preliminary studies.

Besides that, we have also submitted several other papers (3 journal papers and 1 conference paper) for reviewing, and we are still waiting for their acceptance. Their results will be reported next year.

10. キーワード

- | | | | |
|------------------------------|---------------------------|-----------------------|---------------------|
| (1) Person re-identification | (2) Set-based recognition | (3) Deep learning | (4) Metric learning |
| (5) Efficiency | (6) Scalable | (7) Transfer learning | (8) |

11. 現在までの進捗状況

(区分) (3) やや遅れている。

(理由)

We have got encouraging research progress and achievements, and explored new possibilities that we didn't planned to do. However, we weren't able to finished all the planned research for the first year, because:

1. Since the beginning of this project, the principle investigator (PI) has been working at a new position (the actual research staff that takes care of the newly built NAIST International Collaborative Laboratory for Robotics Vision) for establishing the international collaboration and starting several new research topics. The new research topics need more efforts than expected in the beginning, so the work on the project is delayed a little bit.

2. Some new research trend on the research topic appeared and developed very quickly, so the PI spent some time investigating it. More concretely, deep learning models have recently shown striking performances on many recognition problems and also achieved significant better performance than other methods this year on the person re-identification tasks. Therefore, the PI was trying to catch up its latest progress and borrow some key ideas from it for enhancing our research. We also got some initial research outcomes from the study.

12. 今後の研究の推進方策 等

(今後の推進方策)

Though the original plan has been delayed a little bit, we still believe that the proposed model is a promising solution. Meanwhile, the latest research progresses can also be adopted to enhance parts of our model. Therefore, the plan for our future work in the left two years will be as follows.

1. To test the state-of-the-art features, including the ones from deep neural networks.
2. To keep implementing the fast clustering of data and fast search techniques.
3. To try some recent metric learning models for a better integration with our collaborative representation model.
4. Doing the experiments not only on our own dataset, but also on a newly published dataset which contains significantly more people.

(次年度使用額が生じた理由と使用計画)

(理由)

For the first year, most of the traveling cost has been covered by other budgets of the university, so that more money will be reserved for supporting the publications and presentations of our research results at conferences venues for the next two years.

(使用計画)

The reserved budget will be used for supporting probably more publications and travelings in the next two years. Meanwhile, we will use some budget for buying a few new PCs to support our research.

(課題番号: 15K16024)

(注) ・印刷に当たっては、A4判(縦長)・両面印刷すること。

13. 研究発表(平成27年度の研究成果)

(雑誌論文) 計(1)件/うち査読付論文 計(1)件/うち国際共著 計(1)件/うちオープンアクセス 計(0)件

著者名		論文標題				
Wei Li, Yang Wu, Masayuki Mukunoki, Yinghui Kuang, Michihiko Minoh		Locality based discriminative measure for multiple-shot human re-identification				
雑誌名	査読の有無	巻	発行年	最初と最後の頁	国際共著	
Neurocomputing	有	167	2015	280-289	該当する	
掲載論文のDOI(デジタルオブジェクト識別子)						
10.1016/j.neucom.2015.04.068						
オープンアクセス						
オープンアクセスではない、又はオープンアクセスが困難						

(学会発表) 計(2)件/うち招待講演 計(0)件/うち国際学会 計(2)件

発表者名		発表標題	
Chang Lu, Yanyun Qu, Jianping Fan, Yang Wu, Hanzi Wang		Hierarchical Learning for Large-scale Image Classification via CNN and Maximum Confidence Path	
学会等名	発表年月日	発表場所	
The 16th Pacific-Rim Conference on Multimedia(国際学会)	2015年09月16日 ~ 2015年09月18日	Gwangju, Korea	

発表者名		発表標題	
Yanyun Qu, Li Lin, Weiming Liao, Yang Wu, Hanzi Wang		Text Localization with Hierarchical Multiple Feature Learning	
学会等名	発表年月日	発表場所	
The 16th Pacific-Rim Conference on Multimedia(国際学会)	2015年09月16日 ~ 2015年09月18日	Gwangju, Korea	

(図書) 計(0)件

著者名	出版社		
書名	発行年	総ページ数	

14. 研究成果による産業財産権の出願・取得状況

(出願) 計(0)件

産業財産権の名称	発明者	権利者	産業財産権の種類、番号	出願年月日	国内・外国の別

(取得) 計(0)件

産業財産権の名称	発明者	権利者	産業財産権の種類、番号	取得年月日	国内・外国の別
				出願年月日	

15. 科研費を使用して開催した国際研究集会

(国際研究集会) 計(0)件

国際研究集会名	開催年月日	開催場所

16. 本研究に関連して実施した国際共同研究の実施状況

(1) 国際共同研究: 国際共同研究である

共同研究相手国	相手方研究機関			
China	Xiamen University	Southeast University	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
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17. 備考