

# QUIK team @ NTCIR-14 Lifelog-3 task

## Smart Lifelog Retrieval System with Habit-based Concepts and Moment Visualization

Tokinori Suzuki  
Kyushu University

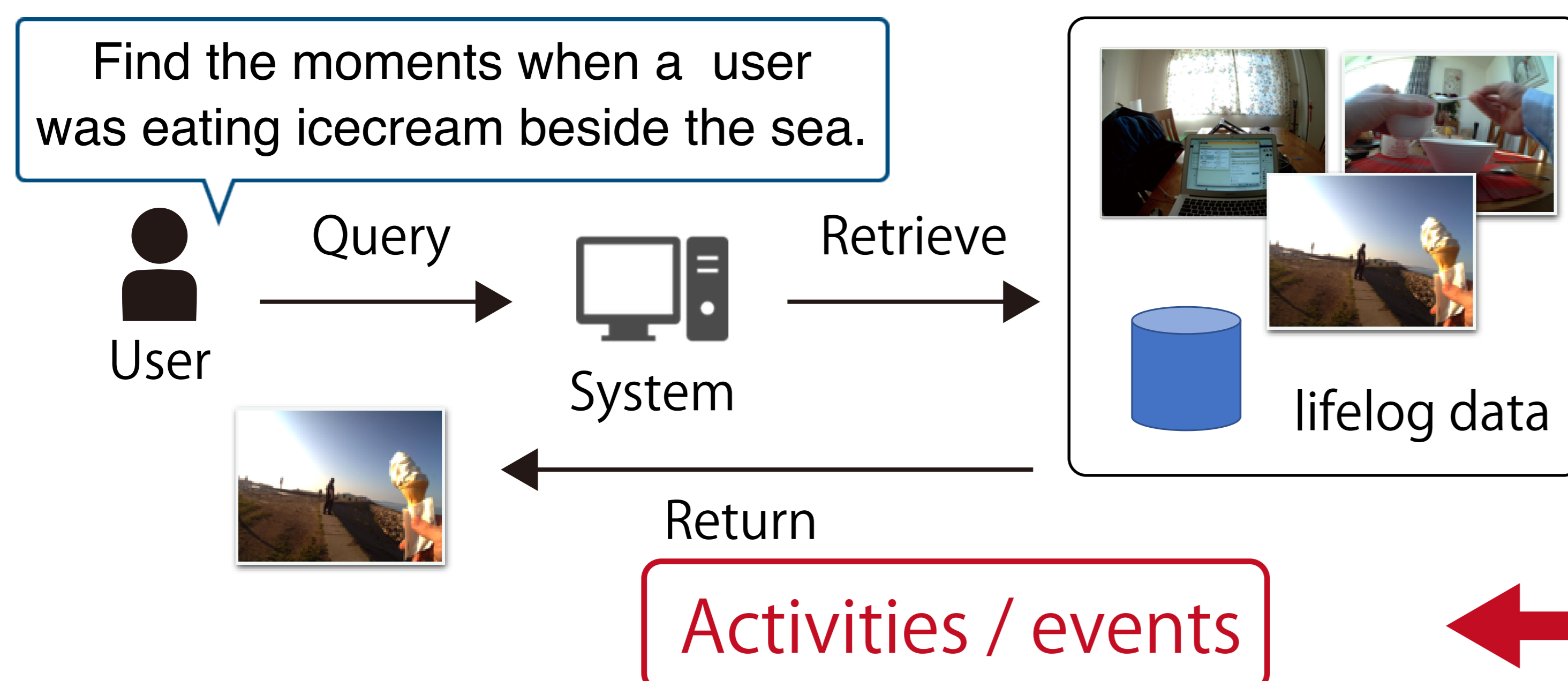
suzuki.tokinori.070@s.kyushu-u.ac.jp

Daisuke Ikeda  
Kyushu University

daisuke@inf.kyushu-u.ac.jp

### 1. Lifelog Semantic Access sub-Task (LSAT)

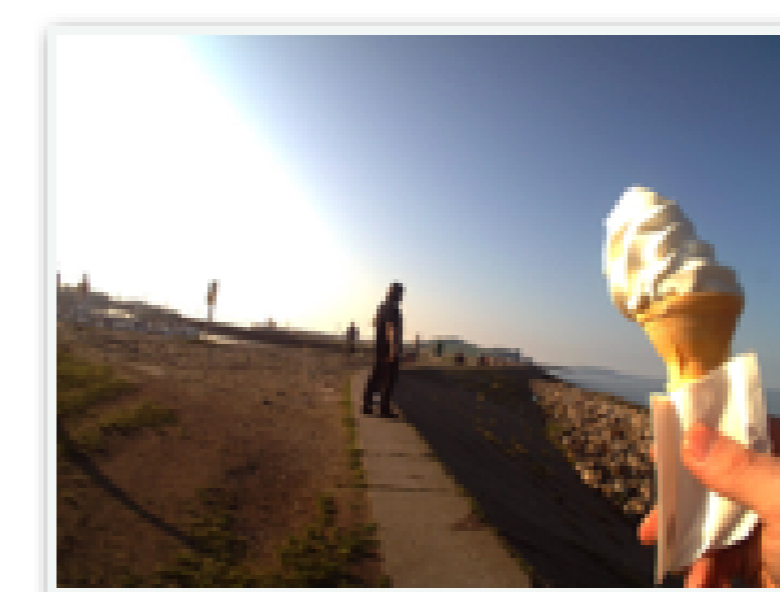
- Given a query topic of semantic events/activities, a system retrieves relevant moments in a lifelogger's daily life



Semantic gap between events/activities of queries and meta data vocabularies

### 2. Lifelog Data

- Lifelog data are in multimodal: Images, music listening activities, heart rate, steps, physical activities and so on.
- We use images captured by wearable cameras worn on lifeloggers
- Meta data of images which are about locations and objects of images are provided.



Attribute	Category	Cat. score	Concept	Con. score
Natural light	Desert	0.094	Person	0.997
Sunny	Canyon	0.054	Person	0.989
Clouds	Promenade	0.048	Person	0.977
...	...	...	...	...

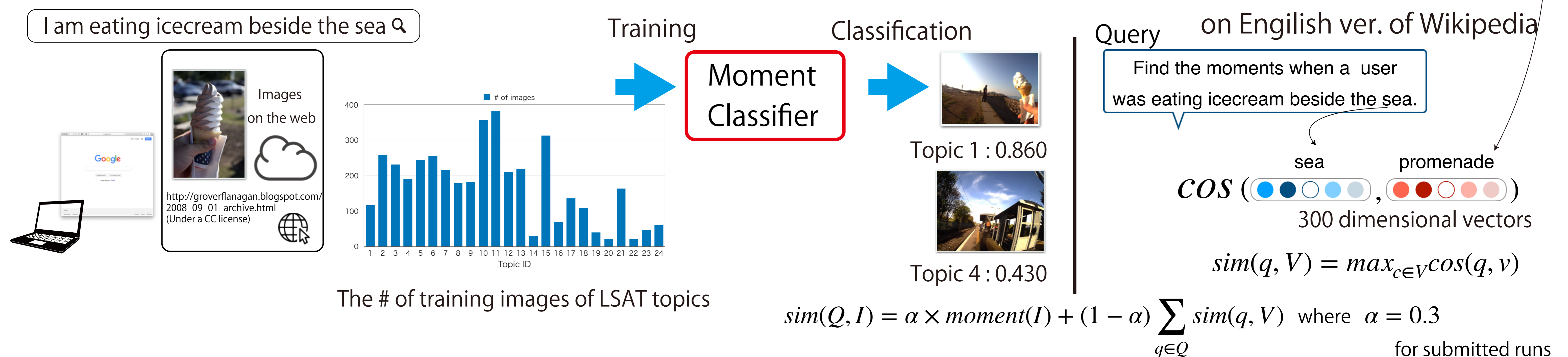
### 3. Proposed approach

With an intention to alleviate the gap, we make use of visual features and word vectors in the approach

1) similarity to the moments of query topics

2) similarity to visual concepts

- Training data collected by Web search engine with topic queries
- Moment classification of 24 query topics The classifier is trained with ResNet model (He, '16)
- Similarity over word vectors learnt by word2vec (Mikolov' 13)



### 4. Experiment

- Images of capturing two lifeloggers' daily life

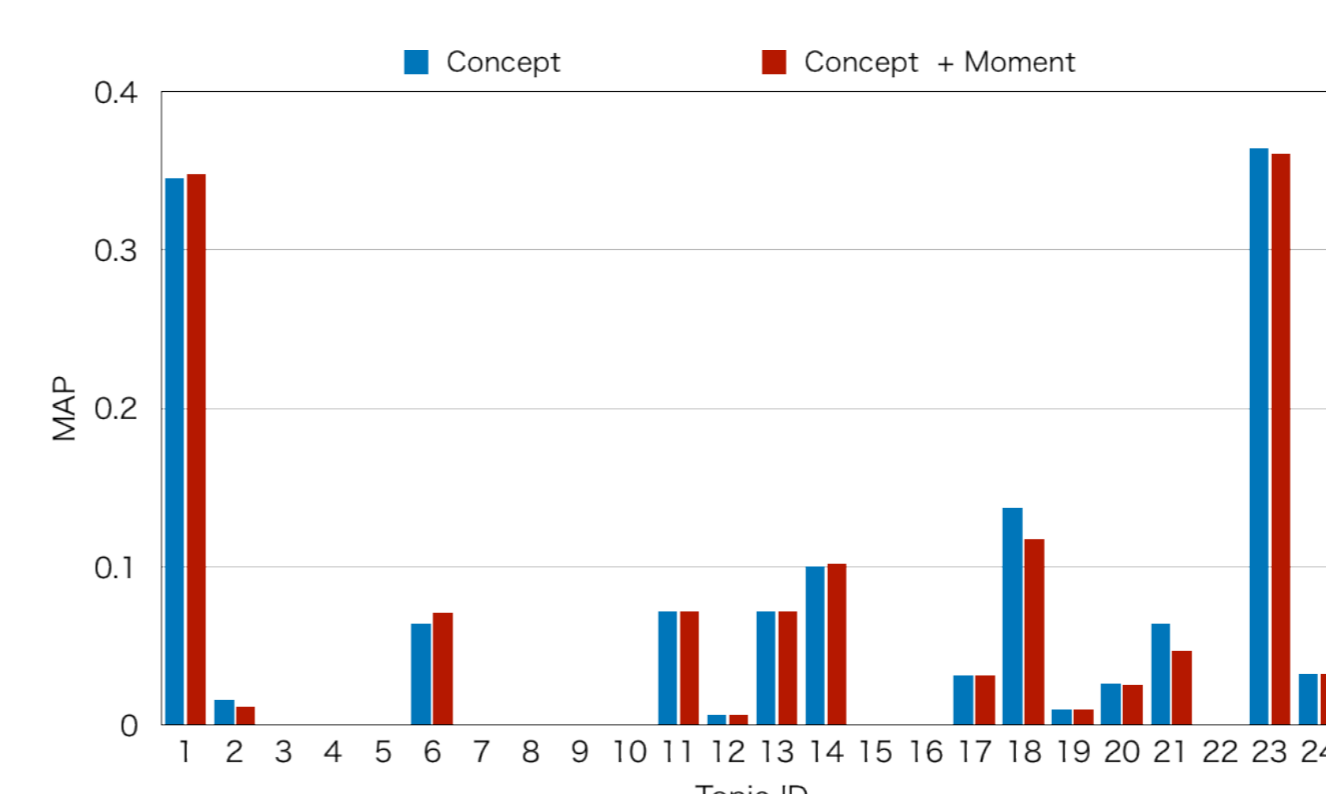
User	Period	# of days	# of images
User 1	3 May ~ 31 May 2018	29	64,132
User 2	9 May ~ 22 May 2018	14	17,615
Total		43	81,747

- Query terms are noun and verb words tagged by Stanford POS tagger (Toutanova, '03) in title of each topic

Topic 1: "Find the moments when a user was eating icecream beside the sea" → "user", "eating", "icecream", "sea"

- Official results

Approach	MAP	P@10	RelRet
Concept	0.045	0.195	232
Concept + Moment	0.045	0.187	232



- A little difference on results b/w Concept and Moment approach
- While there are a little improvement on some topics, side effects occurs on other topics.

### 5. Conclusion

- QUIK team proposed a retrieval approach with moment visualization and visual concepts for LSAT task.
- The approach was tested on one setting of a weighting parameter. Additional configuration on the parameter are required