Another Links in Social Networks using Face Recognition

Author: Jakub Stonawski (stonawski.jakub@gmail.com)
Supervisor: doc. RNDr. Petr Šaloun, Ph.D. (petr.saloun@vsb.cz)
VŠB – Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science, Department of Computer Science

Abstract

Main goal was to create and describe an algorithm that will offer new connections inside the specific social network.

The goal of this thesis was to use identification of a user with help of a face recognition when new suggestions of contacts are created.

Secondary result of the solution is back-propagation of information about people who were found in the photos. This information is published in text form in a tag of the specific photo.

Keywords

Face recognition, Social Networks, Betaface, Facebook, Flickr, Find new contacts

Main Steps

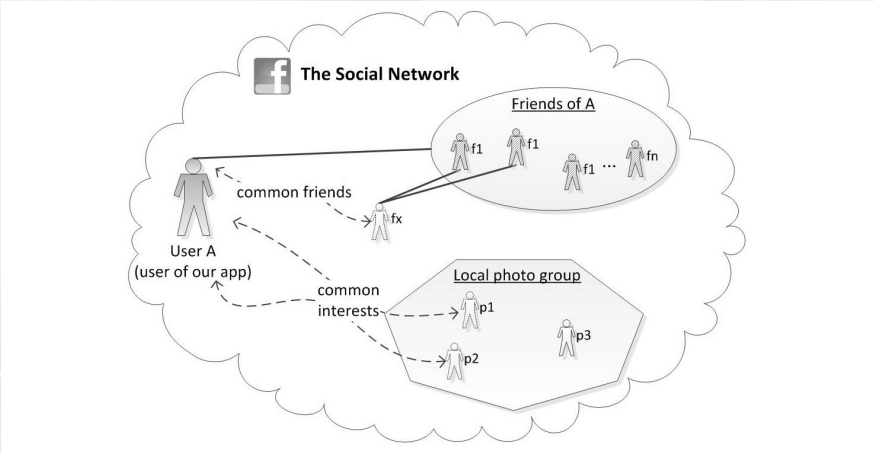
- Analyze and choose suitable freeware software for Face Recognition
- Analyze best known social networks
- Develop an experimental algorithm for new friends suggestions
- Test new solution on real data

Publications (accepted)

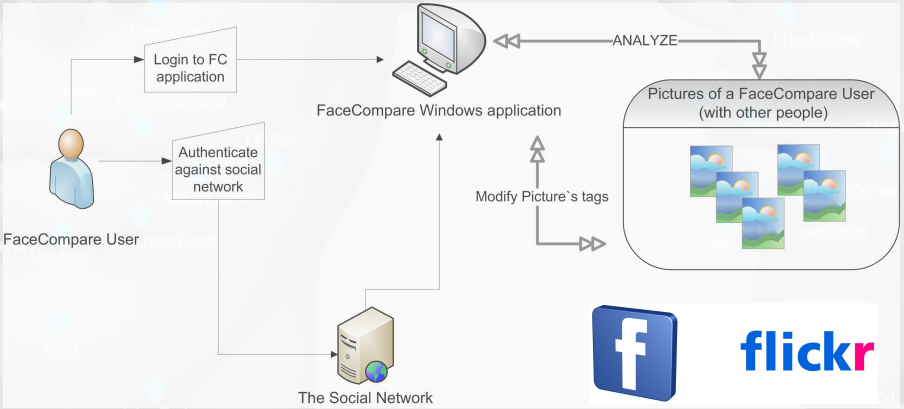
- **Recommending New Links in Social Networks using Face Recognition** -SMAP 2013 France, IEEE
- **Automated Face Comparison with Facebook Friend's Faces and Flickr Photos** -AETA 2013 Vietnam, Springer

Main Idea of the Project

Help new user of social network to expand the list of friends with new relevant people with help of the face recognition. Solution is based on free available tools where each of them could be replaced by the better one in the future. Black box and I/O interface idea is used across the project.



In the current situation mainly text data is used for new contacts suggestions. Our algorithm analyze photos where the user of our service is captured with other people. If additional information about this people are available (e.g. in tags) these people can be found in the social network and new connections can be made.



Results

- for tests real Facebook and Flickr profiles were used
- algorithm provides more relevant data than conventional approaches (e.g. these where text information is analyzed)
- in set of 20 images where **10** new people were captured, the algorithm provides **4** new connections
- all new contacts suggestions were 100% relevant (no false suggestions)

Pic	New Faces	Friends Faces	Detected Faces	New contacts sugg. OK	New contacts sugg. Bad	New Tags added OK	New Tags added Bad
1	0	2	2	0	0	1	0
2	0	3	3	0	0	0	2
3	0	2	3	0	0	0	0
4	1	0	1	0	0	0	1
5	2	1	4	1	0	1	1
6	1*	0	1	0	0	0	0
7	1*	0	1	0	0	0	0
8	0	1	3	0	0	1	0
9	3*	0	2	0	0	0	0
10	1*	0	1	0	0	0	0
11	0	1	2	0	0	0	0
12	0	4	0	0	0	0	0
13	0	6	6	0	0	1	2
14	2	0	2	2	0	2	0
15	2*	7	9	0	0	1	3
16	0	2	2	0	0	0	1
17	4+1*	0	6	0	0	0	2
18	1*	0	1	0	0	0	0
19	1*	0	1	1	0	1	0
20	0	2	2	0	0	0	0

* numbers with star means undetectable people (additional information about names was missing)

Future Development

- improve face-recognition stage (own solution/find new free service)
- increase quality of creation new tags for photos (related to quality of face recognition SW)
- develop better analysis of text information in tags