Scientific Report

First name / Family name	Özlem Özgöbek
Nationality	Turkish
Name of the *Host Organisation*	NTNU
First Name / family name of the *Scientific Coordinator*	Jon Atle Gulla
Period of the fellowship	01/10/2015 to 30/09/2016

I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

During my research stay in NTNU I was involved in the SmartMedia project group. SmartMedia is an industrial funded project lead by Prof. Jon Atle Gulla on news recommendation and analytics. My research activities during my fellowship are as follows:

- I was involved to run a user study to test the usability of a newly developed user interface of a personalized news reading experience application and published a paper as a result of this study entitled "Interactive Mobile News Recommender System: A Preliminary Study of Usability Factors".

- I was involved in the research on detecting real time news by analyzing the tweets collected from Twitter. In this research mainly topic modeling, locality-sensitive hashing (LSH) and named-entity recognition (NER) are used.

- I started to work on privacy-preserving recommendation techniques.

- Except news recommendation, I worked a little bit on the gender gap and underrepresentation of women in computer related industrial sectors and academia. I also focused a little bit on the importance of software licenses and free/open source software.

- I was the co-organizer of 4th International Workshop on News Recommendation and Analytics (INRA 2016) and 2nd Norwegian Big Data Symposium (NOBIDS) as well as the responsible for proceedings.

- I was supervising two MSc students.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

Title: "Hybrid Entity Driven News Detection on Twitter", CICLing 2016, April 2016. (Published)
Authors: Henning Wold, Linn Vikre, Özlem Özgöbek, Jon Atle Gulla

Abstract: In recent years, Twitter has become one of the most popular microblogging services on the Internet. People sharing their thoughts and feelings as well as the events happening around them, makes Twitter a promising source of the most recent news received directly from the observers. But detecting the newsworthy tweets is a challenging task. In this paper we propose a new hybrid method for detecting real-time news on Twitter using locality-sensitive hashing (LSH) and named-entity recognition (NER). The method is tested on 72,000 tweets from the San Fransisco area and yields a precision of 0.917.

Title: "Twitter Topic Modeling For Breaking News Detection", Webist 2016 Conference, April 2016. (Published)
Authors: Henning M. Wold, Linn Vikre, Jon Atle Gulla, Özlem Özgöbek, Xiaomeng Su

Abstract: Social media platforms like Twitter have become increasingly popular for the dissemination and discussion of current events. Twitter makes it possible for people to share stories that they find interesting with their followers, and write updates on what is happening around them. In this paper we attempt to use topic models of tweets in real time to identify breaking news. Two different methods, Latent Dirichlet Allocation (LDA) and Hierarchical Dirichlet Process (HDP) are tested with each tweet in the training corpus as a document by itself, as well as with all the tweets of a unique user regarded as one document. This second approach emulates Author-Topic modeling (AT-modeling). The evaluation of methods relies on manual scoring of the accuracy of the modeling by volunteered participants. The experiments indicate topic modeling on tweets in real-time is not suitable for detecting breaking news by itself, but may be useful in analyzing and describing news tweets.

Title: "IT Women in Turkey: Education and Career Obstacles", 22nd ICE/IEEE International Technology Management Conference, Norway, June 2016. (Published)
Authors: Yonca Bayrakdar, Özlem Özgöbek

Abstract: Women in Turkey are capable of representing themselves to some extend in computing field in both professional and educational life. However, there are socioeconomic, legal and personal factors which can limit the participation of more female workers in IT (information technologies) world. In particular, social perception and the predefined gender roles have very powerful impact on women when they make choices about their education and job. The picture around the world is not very different than Turkey. Therefore, all countries share the same concerns about increasing the representation of women in IT field. In this paper the overall situation of Turkish women about education and labor is presented according to the recent statistical data. Also Turkey specific reasons and the potential solutions for the question of small representation ratios of women in IT are discussed.

Title: "The Importance of Software Licenses for Software Startups", 2nd International Workshop on Software Startups, ICE Conference, Norway June 2016. (Published)
Author: Özlem Özgöbek

Abstract: Startups are the trending and innovative way of developing technologies. Software startups build their businesses on developing innovative software products. Their success is based on many factors as well as their business models. In this paper, the importance of software licensing for software startups is discussed with a little bit more focus on the open source licenses. Also the open source business models are introduced shortly. Finally the relation between business models and success of startups is briefly discussed.

Title: "The Intricacies of Time in News Recommendation", INRA 2016 Workshop, UMAP 2016, Canada, 2016. (Published)
Authors: Jon Atle Gulla, Arne Dag Fidjestøl Jon Espen Ingvaldsen, Cristina Marco, Xiaomeng Su, Özlem Özgöbek

Abstract: It is commonly accepted that time is a critical issue in news recommendation. As opposed to book or movie recommendations, news articles have extremely short life spans and should normally not be recommended after a few days. Most current news recommender systems use time as a decaying factor in ratings or just cut off older articles according to some simple mechanism. An experiment done on four different newspapers in Norway reveal that the time issue is somewhat more complicated. The life span of articles varies substantially from one newspaper to another, and from one category to another. Social media like Facebook may affect articles' life span, though the influence of social media is highly category-dependent.

Title: "Interactive Mobile News Recommender System: A Preliminary Study of Usability Factors ", SMAP 2016, Thessaloniki, Greece. (Recently accepted)
Authors: Xiaomeng Su , Özlem Özgöbek, Jon Atle Gulla, Jon Espen Ingvaldsen, Arne Dag Fidjestøl

Abstract: Interactive news recommender systems allow the user to steer the received recommendations in the desired directions through explicit interaction with the system. It provides a user experience in between a "lean back and let the news wash over me" experience and an "active search and hunt for specific pieces" experience. On the other hand, this added level of interaction might also be perceived as extra burden from the user side and therefore experience a decreased level of user experience. This paper describes a user study which uncovers factors that influence the usability of interactive news recommender system. The user study is carried out by contrasting an experimental system where interaction is granted with a baseline system where interaction is absent. The study demonstrated that test participants find the ability to actively shape its news recommendation strategy a useful and desirable feature. In addition, time, location and user interest as dimensions for interaction seems reasonable. Lastly, it identifies three factors that are of particular importance when designing interactive news recommender systems.

III – ATTENDED SEMINARS, WORKHOPS, CONFERENCES

- Teacher Training Seminar, NTNU, Trondheim, Norway, January 2016.
- 17th International Conference on Intelligent Text Processing and Computational Linguistics (CICLing 2016), Konya, Turkey, April 2016.
- 12th International Conference on Web Information Systems and Technologies (Webist 2016), Rome, Italy, April 2016.
- 22nd ICE/IEEE International Technology Management Conference, Trondheim, Norway, June 2016.
- INRA 2016 Workshop, 24th Conference on User Modeling, Adaptation and Personalization (UMAP 2016), Halifax, Canada, July 2016.
- SEMANTICS 2016 Conference, Leipzig, Germany, September 2016.

IV – RESEARCH EXCHANGE PROGRAMME (REP)

For REP, I visited Prof. Luc Martens' Wireless and Cable group at Ghent University (http://www.wica.intec.ugent.be/), Belgium between 07.12.2015 – 11.12.2015.

They were very welcoming and interested in collaboration. REP was a good opportunity to learn about their research topics and meet with them. On the other hand 5 days was very short to start any useful collaboration.