



ERCIM "ALAIN BENSOUSSAN"
FELLOWSHIP PROGRAMME



Scientific Report

First name / Family name

Nancy Agarwal

Nationality

Indian

Name of the *Host Organisation*

Norwegian University of Science and
Technology (NTNU), Gjøvik, Norway

First Name / family name
of the *Scientific Coordinator*

Patrick Bours, Guoqiang Li

Period of the fellowship

01/01/2020 to 31/12/2020

I – SCIENTIFIC ACTIVITY DURING YOUR FELLOWSHIP

- Co-supervised 2 master and 3 bachelor students.
- Designed two web-based applications for data collection.
- Designed several crawling scripts to collect the data from social networks.
- Employed deep learning frameworks for building three intelligent detectors, namely, grammar detector, rumour detector and predatory conversation detector.
- Conducted experiments on various public dataset to compare the four well-known word embedding techniques, i.e. word2vec, fastText, GloVe and ELMo from multi parameters.

II – PUBLICATION(S) DURING YOUR FELLOWSHIP

Accepted publications:

- Mudasir Ahmad Wani, Nancy Agarwal, and Patrick Bours. *"Impact of Unreliable Content on Social Media Users during COVID-19 and Stance Detection System."* Electronics 10.1 (2021): 5.
- Nancy Agarwal, Mudasir Ahmad Wani, Patrick Bours. *"Lex-Pos feature-based Grammar Error Detection system for the English Language"*. Electronics.
- Patrick Bours, Esther Theisen, Nancy Agarwal. *"Us against the World: Detection of Radical Language in Online Platforms"*. 13th annual Norwegian Information Security Conference. (NISK 2020).
- Mudasir Ahmad Wani, Nancy Agarwal, Patrick Bours *"Emotion-based Mining for Gender Prediction in Online Social Networks"*. International Conference on Machine Learning and Data Science (ICMLDS-2019).
- Nancy Agarwal, Mudasir Ahmad Wani, Patrick Bours. *"A Language-independent gender classifier for Online Social Networks"*. 3rd IEEE Conference on Information and Communication Technology.

Pending publications:

- Nancy Agarwal, Tugce, Mudasir Ahmad Wani, Patrick Bours. *Transfer Learning Approach for Detecting Predatory Conversations*.
- Nancy Agarwal, Mudasir Ahmad Wani, Patrick Bours. *Technical Analysis of Word Embedding Techniques*.
- Mudasir Ahmad Wani, Patrick Bours, Nancy Agarwal. *Designing an online Sexual-Predator Detection System*.
- Nancy Agarwal, Mudasir Ahmad Wani, Patrick Bours. *An insight into Binary tree SVM algorithms for Multiclass Classifications*.

III – ATTENDED SEMINARS, WORKHOPS, CONFERENCES

- Attended Norwegian Biometrics Laboratory (NBL) Annual Workshop 2020, at NTNU, Gjøvik, Norway March on 04, 2020
- Delivered an invited talk on User Security in Online Social Networks in IKK department of NTNU.

IV – RESEARCH EXCHANGE PROGRAMME (REP)

Host Institute: Centrum Wiskunde& Informatica (CWI), Amsterdam, Netherlands
Scientific Contact: Dr. ABDALLAH EL ALI (Email:Abdallah.El.Ali@cwi.nl)

Due to the global pandemic caused via Coronavirus, I could not visit the host institute, and thereby, conducted the Research Exchange Programme online via Skype. The REP helped me to share my research problems and experiences to the professors, postdoctoral researchers, and Ph.D. students at the department and receive valuable inputs and feedbacks from them. In the virtual meetings, I presented my past and current research on various nlp-based problems such as grammar detection in English sentences and emotion detection in the posts of Online Social Networks (OSNs) user. As an output of the programme, in the future, we are looking forward to work together on a suitable research project.