ACL 2018

Economics and Natural Language Processing

Proceedings of the First Workshop (ECONLP 2018)

July 20, 2018
Melbourne, Australia

Introduction

Welcome to ECONLP 2018, the First Workshop on Economics and Natural Language Processing held at ACL 2018 in Melbourne, Australia on July 20, 2018.

This workshop addresses the increasing relevance of natural language processing for regional, national and international economy, both in terms of already launched language technology products and systems, as well as new methodologies and techniques emerging in interaction with the paradigm of computational social science and computational economics. The focus of the workshop is on the many ways how NLP alters business relations and procedures, economic transactions, and the roles of human and computational actors involved in economic activities.

The topics at the intersection of NLP, economy, business, organization, enterprise, management and consumer studies that ECONLP addresses include (the list below is by no means exhaustive):

- NLP-based (stock) *market* analytics, e.g., prediction of economic performance indicators (trend prediction, volatility analysis, performance forecasting, etc.), by analyzing verbal statements of enterprises, businesses, companies, and associated legal or administrative actors

- NLP-based *product* analytics, e.g., based on (social) media monitoring, summarizing reviews, classifying and mining complaint messages, etc.

- NLP-based *customer* analytics, e.g., customer profiling, tracking product/company preferences, screening customer reviews or complaints, identifying high-influentials, etc.

- NLP-based *organization/enterprise* analytics, e.g., by tracing and altering their social images in the media, conducting fraud analysis based on screening business, sustainability and auditing reports

- *Market sentiments and emotions* with evidence collected from consumers, and enterprises, subjective verbal behavior and their communication about products and services

- *Competitive intelligence services* based on NLP tooling

- Relationship and interaction between *quantitative* (structured) economic data (e.g., time series data) and *qualitative* (unstructured verbal) economic data (such as press releases, newswire streams, social media contents, etc.)

- *Information management* based on organizing and archiving continuous verbal streams of communication of organizations and enterprises (emails, meeting minutes, business letters, etc.)

- *Credibility and trust models* of agents in the economic process (e.g., as retailers, shoppers, suppliers, advertisers, market intermediaries) based on text/opinion mining of communication traces and legacy data from past interaction activities

- Verbally fluent *software agents* (language bots) as actors in economic processes who take different roles in the business process and thus embody, e.g., models of persuasion, fair trading and information exchange, or conflicting interests, etc.

- *Enterprise search engines* (e-commerce, e-marketing) — electronic equivalents of yellow pages (e-shops) which inform/consult/guide consumers in the market space based on natural language interaction

- *Consumer search engines*, market monitors, product/service recommender systems that allow consumers to search for products based on verbally expressed individual needs, requirements and constraints, including economic matchmaking functionality

- *Customer-supplier interaction platforms* (e.g., service providing portals and help desks, newsgroups) and transaction support systems based on collaborative natural language communication

- Specialized modes of *information extraction and text mining* in economic domains, e.g., temporal event or transaction mining

- *Information aggregation* from single sources, e.g., review summaries, automatic threading of dialogues, issue or argument tracking in dialogues

- *Economy-specific text genres* (business reports, sustainability reports, auditing documents, product reviews, economic newswire, business letters, legal documents, etc.) and their implications for NLP

- *Corpora and annotations policies* (guidelines, metadata schemata, etc.) for economic NLP

- Dedicated *ontologies* for economics and adaptation of *lexicons* for economic NLP

- Dedicated *software resources* for economic NLP (e.g., NER taggers, sublanguage parsers, pipelines for processing economic discourse)

Two types of papers were solicited for the ECONLP workshop:

- Long papers (8+1 pages) should describe solid results with strong experimental, empirical or theoretical/formal backing,

- Short papers (4+1 pages) should describe work in progress where preliminary results have already been worked out.

We received 16 submissions (from which 2 were withdrawn during the review process), and based a rigorous review process, we accepted 2 as long papers, 7 as short papers and rejected 5 from the remaining 14 papers. Accordingly the acceptance (rejection) rate was 64% (36%). The acceptance/ rejection ratio amounts to 1.9.

We want to thank those colleagues who submitted their work to our workshop and hope that their efforts will start a process of sustainable activities in this exciting domain. In particular, we also want to thank our PC members whose thorough and in-time reviews were the basis for properly selecting the papers presented at this workshop. Finally, we hope the attendants of the workshop enjoyed the presentations and discussions in Melbourne.

The organizers of ECONLP 2018

Udo Hahn
Véronique Hoste
Ming-Feng Tsai

Workshop Organizers:

Udo Hahn	Friedrich-Schiller-Universität Jena, Germany (Chairman)
Véronique Hoste	Ghent University, Belgium
Ming-Feng Tsai	National Chengchi University, Taiwan

Program Committee:

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Padmini Srinivasan	University of Iowa, Iowa City, IA, USA
Chuan-Ju Wang	Academia Sinica, Taiwan
Yue Zhang	Singapore University of Technology and Design, Singapore

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Conference Program

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Udo Hahn

09:30–10:00   *Economic Event Detection in Company-Specific News Text*
Gilles Jacobs, Els Lefever and Véronique Hoste

10:00–10:30   *Causality Analysis of Twitter Sentiments and Stock Market Returns*
Narges Tabari, Piyusha Biswas, Bhanu Praneeth, Armin Seyeditabari, Mirsad Hadzikadic and Wlodek Zadrozny

10:30–11:00   ***Morning Coffee Break***

11:00–11:20   *A Corpus of Corporate Annual and Social Responsibility Reports: 280 Million Tokens of Balanced Organizational Writing*
Sebastian G.M. Händschke, Sven Buechel, Jan Goldenstein, Philipp Poschmann, Tinghui Duan, Peter Walgenbach and Udo Hahn

11:20–11:40   *Word Embeddings-Based Uncertainty Detection in Financial Disclosures*
Christoph Kilian Theil, Sanja Štajner and Heiner Stuckenschmidt

11:40–12:00   *A Simple End-to-End Question Answering Model for Product Information*
Tuan Lai, Trung Bui, Sheng Li and Nedim Lipka

12:00–14:00   ***Lunch Break***

14:00–14:20   *Sentence Classification for Investment Rules Detection*
Youness Mansar and Sira Ferradans

14:20–14:40   *Leveraging News Sentiment to Improve Microblog Sentiment Classification in the Financial Domain*
Tobias Daudert, Paul Buitelaar and Sapna Negi

14:40–15:00   *Implicit and Explicit Aspect Extraction in Financial Microblogs*
Thomas Gaillat, Bernardo Stearns, Gopal Sridhar, Ross McDermott, Manel Zarrouk and Brian Davis

15:00–15:20   *Unsupervised Word Influencer Networks from News Streams*
Ananth Balashankar, Sunandan Chakraborty and Lakshminarayanan Subramanian

15:30–16:00   ***Afternoon Coffee Break***

ECONLP (continued)

16:00–16:30 *Discussion and Wrap-up*

16:30–17:30 **Poster Session - All of the Papers Presented at the Workshop**