

**Special Session on  
Advanced and Trusted Models and Techniques for Fighting Fakes**

**Co-located with the 16th IEEE International Conference on Advanced and  
Trusted Computing, ATC, Date 19-23, August, Location Leicester, 2019**

**Scenario**

The reliability of online content is put at risk by the phenomenon of fakes: the rampant presence of false news and false profiles on the web. The forms under which the fakes come to life are the most varied: one example are the fake reviews, introduced to discredit (or advertise) products, services, and events. These alter user choices, even influencing markets. Then, there are the fake profiles, over the years more and more evolved and similar to genuine accounts: fake profiles are social accounts created specifically to send spam and to influence public opinion, increasing for example the popularity of their virtual friends. Moreover, it is more and more pervasive the phenomenon of fake news, even published by popular online newspapers. Fake content and profiles help to create a world in which a form of control over users is applied, thus fearing a digital version of the Benthamian panopticon.

**Literature review**

Unfortunately, the various facets with which the false information spread in the web mean that an effective detection is generally context-dependent and closely linked to the domain. For example, for false reviews, techniques based on text analysis have been developed, including the detection of groups of reviewers paid to advertise certain products. For spambots, techniques based on online behaviour analysis have also proved effective against the new generation of highly evolved robots.

As for the news, there is currently no magic algorithm that can reveal 'tout court' the falsity of the same. Automatic techniques based on 'fact checking' require in fact a large amount of data, presumably available at real time, with, in parallel, adequate techniques for analysis of contents and sources. Remarkably, the phenomenon of 'confirmation bias' holds, according to which, in front of so many sources of information possible, each one looks for the one closest to his vision of the world. Although recent studies show how it is possible to leverage this bias, intercepting polarised groups and conveying to such groups stories that are consistent with their world view, the pure detection of fake news is far from being adequately dealt with.

**Aim of the Special Session for Fighting Fakes @ATC2019**

The aim of the Special Session is to present and discuss novel ideas to overcome the current limitations in detection and mitigation of fakes, under their various forms, with the support of advanced and trusted models and techniques.

**Topics of interest**

Areas of interest include, but are not limited to, the design and implementation of methodologies and techniques to detect fakes and/or raise the users' awareness to the

threats represented by fakes, including:

- Text mining, graph mining, network and behavioural analyses to detect fakes (e.g., fake accounts, fake news, fake reviews...);
- Reputation systems to support the detection - or mitigate the effects - of fakes;
- Modelling and analysis techniques to study/predict the dynamics of the spread of fakes;
- Understanding and guiding the societal reaction in the presence of fakes;
- Supervised/unsupervised approaches to let accounts' automation degree emerge from the crowd;
- Detection of information polarization in online communities;
- Definition and evaluation of novel metrics to verify news veracity;
- Domain-free approaches to fight fakes (i.e., context independent w.r.t. accounts, news, reviews, posts, tweets, etc.)

Data-driven approaches, supported by publicly available datasets, are more than welcome.

### **Paper Submission**

A submission is limited to 6 pages for a special session paper. Format is IEEE conference paper, double column, in Portable Document Format (.pdf). A submission can have at most 2 additional pages, with a page overlength charge, if the paper is accepted. Please submit via main conference paper submission website.

### **Paper Publication**

Accepted papers will be published by IEEE CPS (IEEE-DL and EI indexed). At least one author of each accepted paper is required to register and present their work at the conference; otherwise, the paper will not be included in the proceedings. Selected papers will be recommended to special issues. More details can be found at <http://www.smart-world.org/2019/atc/>.

### **Special Session Chair:**

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