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Abstract

This document describes the seminars that were organized by the CyCAT team and delivered by internationally renowned scientists and practitioners. The Seminar Series is part of WP2 and aimed to establish a community of scientists interested in the area of Algorithmic transparency, fairness, accountability and ethics. There have been 17 Seminars that took place either as a face-to-face seminar or online due to COVID-19 restrictions. In this deliverable, a brief description of each seminar is provided along with a link to the CyCAT website and YouTube channel, where all Seminars are made publicly available.

Keyword(s): Seminars

Contents

1. Executive Summary
2. List of Seminars

1. Executive Summary

As described in the CyCAT DoA, the consortium has organized a number of seminars that span in the areas of algorithmic Fairness, Accountability, Transparency and Ethics. The aim was to select speakers from different parts of the world with diverse expertise in the above topics. All Seminars are made publicly available through the CyCAT Website at: <http://www.cycat.io/> and the CyCAT's YouTube channel at:

https://www.youtube.com/channel/UCF6Pe7RGH_gHwNLaEjZlwiQ.

2. List of Seminars

- **Toward Ethical AI (not more AI ethics)**, Prof. Michael Rovatsos, University of Edinburgh
Date: 13 March 2019
Location: Online
Link: <http://www.cycat.io/events/cycat-webinar-ai-ethics/>
Video: https://youtu.be/jYdQ69qX_9k

While the issue of AI ethics is receiving more and more attention, as the adoption of AI technologies in real-world applications is growing immensely, a lot of the discussion is dominated by conceptual and speculative claims and analyses of how we can make sure future AI benefits humanity. Within the AI community, however, it is widely acknowledged that concrete, technical solutions are needed that actually make AI itself behave ethically. In this seminar, Professor Rovatsos will discuss some general issues surrounding ethical problems in AI, and present preliminary work on ethical self-regulation of users in online platforms with a focus on algorithmic fairness.

- **How Personalized, Adaptive and Dangerous is Persuasive Technology?**, Prof. Julita Vassileva, University of Saskatchewan
Date: 8 April 2019
Location: Online
Link:
<http://www.cycat.io/events/how-personalized-adaptive-and-dangerous-is-persuasive-technology/>

The talk will focus on intelligent tutoring systems, social computing and persuasive technology. An introduction to the main methods used in personalized persuasive technology will be presented, along with the dangers and ethical issues.

- **Recommender Systems as the Lens of Life**, Dr. Frank Hopfgartner, University of Sheffield
Date: 24 May 2019
Location: Online
Link:
<http://www.cycat.io/events/cycat-webinar-recommender-systems-as-the-lens-of-life/>
Video: https://youtu.be/_IxXNne938c

Increasingly, algorithms have a strong impact on how we experience the world around us. For example, recommendation algorithms are used to point us to products we might want to buy online, restaurants we should try, or even news articles we might be interested in. As convenient as such recommendations can be, the required automated filtering of content comes with consequences. In this talk, Dr. Hopfgartner will first briefly introduce the most common algorithms used by modern recommender systems. Moreover, he will discuss current limitations and pitfalls of recommender systems. Finally, he will outline a vision on recommendations as the Lens of Life.

- **Toward Measuring Viewpoint Diversity in News Consumption**, Dr. Nava Tintarev, Delft University of Technology
Date: 9 June 2019
Location: UMAP 2019, Larnaca, Cyprus
Link:
<http://www.cycat.io/events/cycat-webinar-toward-measuring-viewpoint-diversity-in-news-consumption/>
Video: <https://youtu.be/MH8fGvogkpl>

The growing volume of digital data stimulates the adoption of recommender systems in different socioeconomic domains, including e-commerce, music, and news industries. While news recommenders help consumers deal with information overload and increase their engagement and satisfaction, their use also raises an increasing number of societal concerns, such as “Matthew effects”, “filter bubbles”, and an overall lack of transparency. Considerable recommender systems research has been conducted on balancing diversification of content with relevance, however, this work focuses specifically on topical diversity. For readers, diversity of `_viewpoint_` on a topic in news is however more relevant. This allows for measures of diversity that are multi-faceted, and not necessarily driven by previous consumption habits. This talk introduces preliminary work together with several Dutch news organizations (e.g., Blendle, Persgroep, and FDMediagroep), aiming to find ways to help users explore viewpoint diversity. The talk will describe our first steps toward informing diverse content selection in a way that is meaningful and understandable, to both content providers and newsreaders.

- **What do deep neural networks know?**, Dr. Olivia Guest, CYENS CoE (Previously known as RISE LTD)
Date: 16 July 2019
Location: PwC Julia House, Nicosia (Ground Floor)
Link: <http://www.cycat.io/events/what-do-deep-neural-networks-know/>

In this talk, I will discuss my work using computational models to understand human and animal cognition as well as how to understand the inner workings of other computational models. How can computational modelling help us open up black boxes and help us understand classification done by pigeons as well as that done by machines? I will explain what computational modelling is and how we can use deep neural networks to model human and animal categorisation. In addition, I will show how these same methods can be used to understand the deep network itself whether we have access to its source code or not analogously to how we can understand classification done by pigeons. I will underline the parallels between understanding black boxes that are incredibly complex feats of human engineering and understanding systems that are products of evolution like brains. Some of the barriers to algorithmic transparency can be overcome using modelling techniques from cognitive science, furthering our understanding of how sophisticated machine learning applications, like deep networks, see the world.

- **Artificial Intelligence, the Popular Imaginary, and New Inequalities**, Dr. Marina Hassapopoulou, New York University
Date: 26 September 2019
Location: PwC Julia House, Nicosia
Link: <http://www.cycat.io/events/artificial-intelligence-the-popular-imaginary-and-new-inequalities/>

The quest for singularity through Artificial Intelligence is often heralded as the ultimate frontier of technological advancement. However, with the techno-scientific breakthroughs moving at an increasingly fast velocity, the ethical, environmental, and human-oriented impact is often neglected. This talk aims to approach A.I., machine learning, and algorithmic culture from an Arts and Humanities-oriented perspective in order to propose a more interdisciplinary accompaniment to techno-scientific research. By charting an international historiography of A.I. through popular science fiction and experimental media (including some of the first experiments with A.I. in cinema and early computational media), this talk will cover some ideological and epistemological overlaps between the Arts and Sciences, in hopes of reconfiguring more inclusive and diverse paths for A.I., machine learning, and algorithmic culture in the not-so-distant future.

- **Profiling humans, profiling bots, profiling you.** Prof. Paolo Rosso, Universitat Politècnica de Valencia
Date: 14 November 2019
Location: PwC Julia House, Nicosia
Link: <http://www.cycat.io/events/profiling-humans-profiling-bots-profiling-you/>
Video: https://youtu.be/j2-l3195b_U

Author profiling studies how language is shared by people. This helps in identifying aspects such as gender, age, native language, or even personality. Author profiling is a problem of growing importance in forensics, security, and marketing. E.g., from a forensic linguistics perspective, one would like being able to know the profile of the author of a harassing text message; from a marketing viewpoint, companies may be interested in knowing, on the basis of the analysis of blogs and online product reviews, the demographics of people that like or dislike their products. Our focus will be on author profiling in social media since we are mainly interested in everyday language.

After having addressed since 2013 at the PAN Lab at CLEF (<https://pan.webis.de/>) several aspects of author profiling in social media (age and gender, personality, language variety, and gender from a multimodal perspective), in 2019 we investigated the feasibility of distinguishing whether the author of a Twitter feed is a bot or a human. In fact, social media bots may influence users with commercial, political or ideological purposes. For example, bots could artificially inflate the popularity of a product by promoting it and/or writing positive ratings, as well as undermine the reputation of competitive products through negative valuations. The threat is even greater when the purpose is political such as for the Brexit referendum or the US Presidential election (fearing the effect of this influence, the German political parties have rejected the use of bots in their electoral campaign for the general elections). Furthermore, bots are commonly related to fake news spreading. Therefore, to approach the identification of bots from an author profiling perspective is of high importance. In this talk, we will briefly describe some of these years' PAN author profiling shared tasks.

- **Fake news detection with content and social information,** Dr. Anastasia Giachanou, Universitat Politècnica de Valencia
Date: 15 November 2019
Location: Open University of Cyprus, Latsia, Cyprus
Link: <http://www.cycat.io/events/fake-news-detection-with-content-and-social-information/>
Video: <https://youtu.be/9Hsps20XV8E>

The spread of fake news is considered one of the most critical threats of our society in recent years. Despite all the attempts, the automatic detection of fake news still remains an open problem. Although fake news exists for a long period of time, the ubiquitousness of social media has facilitated their propagation with severe consequences for society. For example, the “Pizzagate” shooting incident was a result of fake news that went viral claiming the involvement

of a restaurant in human trafficking. This talk will focus on the topic of fake news detection. First, I will introduce the concept and characteristics of the different types of misinformation and disinformation such as fake news, satire, rumors that go viral in online social networks. Then, I will present some of the most recent detection approaches with a particular focus on approaches that exploit psycho-linguistic information (i.e., emotion, sentiment, informal language) and those that exploit information extracted from users. Finally, I will discuss the challenges and open issues in the field of fake news detection.

- **Digital Language Divide**, Prof. Fausto Giunchiglia, University of Trento
Date: 13 April 2020
Location: Online
Link: <http://www.cycat.io/events/cycat-webinar-digital-language-divide/>
Video: <https://youtu.be/5WviYpJM3es>

This seminar focuses on the so-called “Digital Language Divide” namely the fact that only a very small minority of the 8,000 natural languages spoken worldwide (not considering dialects) have a sizable online presence. The seminar starts with an assessment of the problem, it shows the negative effects that this has on the under-resourced languages and then it highlights a possible way to deal with this problem. The proposed approach concentrates on some of the research issues which must be dealt with as well as on DataScientia, an initial attempt to organize a global, bottom-up, worldwide approach to this problem.

- **Inaugural event**

The Cyprus Center for Algorithmic Transparency (CyCAT) hosted an inaugural seminar to its seminar series, which included a number of talks by CyCAT's coordinator and partners.

Date: 15 October 2020

Location: Online

Link: <http://www.cycat.io/events/cycat-inaugural-event/>

- **Educating the Educators**, Prof. Michalinos Zembylas, Open University of Cyprus
Video: <https://youtu.be/VUahWbMhV8s>
- **Educating the Developers**, Ms Maria Kasinidou and Dr. Styliani Kleanthous, Open University of Cyprus
Video: <https://youtu.be/ChEPYjeydXk>
- **Bias in Algorithmic Systems: Problems, Solutions and Stakeholders**, Dr. Kalia Orphanou, Open University of Cyprus
Video: <https://youtu.be/W0xPo9wIacE>
- **Explainability, Fairness and between**, Ms Avital Shulner Tal and Prof. Tsvika Kuflik, University of Haifa
Video: <https://youtu.be/jRZLRRRwCwk>
- **FATE in Data Science**, Dr. Jo Bates and Dr. Frank Hopfgartner, University of Sheffield
Video: <https://youtu.be/OBoOWBR3Czg>
- **Developing an Algorithmic WatchDog**, Prof. Michael Rovatsos and Dr. Lena Podoletz, University of Edinburgh
Video: <https://youtu.be/gHEMND6mWr0>

- **Towards fair, diversity-aware and unbiased data management with a focus on social networks**, Prof. Evaggelia Pitoura, University of Ioannina
Date: 6 November 2020
Location: Online
Link: <http://www.cycat.io/november-seminar/>
Video: <https://youtu.be/4MoL5S5ama0>

For decades, research in data management has focused on improving efficiency (making data access faster and lighter) and effectiveness (providing relevant results to users). As data-driven decision making becomes prevalent, there is a pending need for an additional perspective, that of responsibility. In this talk, we focus on three aspects of responsibility, namely diversity (ensuring that all perspectives are represented), lack of bias (processing data without unjustifiable concentration on a particular side), and fairness (non-discriminatory treatment of data and people). Special emphasis will be given on how these aspects manifest themselves in social networks and on how recent research addresses them.

- **Deconstructing FAT: using memories to collectively explore implicit assumptions, values and context in practices of debiasing and discrimination-awareness**, Prof. Bettina Berendt, Technische Universität Berlin
Date: 13 November 2020
Location: Online
Link: <http://www.cycat.io/november-seminar-ii/>
Video: <https://youtu.be/U4G1CTV1qp4>

This talk will report on the two workshops in which we used the deconstructive-design method of ‘mind scripting’ for exploring hidden assumptions and our own situatedness in research practices on fairness, accountability and transparency. Research in fairness, accountability, and transparency (FAT) in socio-technical systems needs to take into account how practices of computing are entrenched with power relations in complex and multi-layered ways. Trying to disentangle the way in which structural discrimination and normative computational concepts and methods are intertwined, this frequently raises the question of WHO are the actors that shape technologies and research agendas -who gets to speak and to define bias, (un)fairness, and discrimination? “Deconstructing FAT” was the topic of two workshops, co-hosted with Doris Allhutter, that aimed at complicating this question by asking how “we” as researchers in FAT (often unknowingly) mobilize implicit assumptions, values and beliefs that reflect our own embeddedness in power relations, our disciplinary ways of thinking, and our historically, locally, and culturally-informed ways of solving computational problems or approaching our research. To explore these questions, we used the method of ‘mind scripting’, which is based on theories of discourse, ideology, memory and affect and aims at investigating hidden patterns of meaning making in written memories of the panelists (Doris Allhutter, 2012. Mind Scripting: A Method for Deconstructive Design. *Science, Technology & Human Values* 37(6), 684–707.) I look forward to discussing lessons that we learned with you on the way to learning about CyCAT and beyond!

- **Bias in Human-in-the-loop Artificial Intelligence**, Dr. Gianluca Demartini, University of Queensland
Date: 4 December 2020
Location: Online
Link: <http://www.cycat.io/december-seminar/>
Video: https://youtu.be/FrapZWNfs_Y

Paid micro-task crowdsourcing has gained popularity also thanks to the rise of AI because of the convenient way to generate large-scale manually annotated corpora and because of the possibility to create human-in-the-loop systems. However, when using crowdsourcing platforms for data gathering purposes, human factors need to be taken into account as humans now become part of (and are not just users of) the system. In this talk, I will discuss our recent research in the area of micro-task crowdsourcing with a focus on understanding crowd worker behaviors and their implications on the quality of the collected data and the bias in it. I will first discuss open challenges in the crowdsourcing ecosystem including issues caused by adversarial approaches that may disrupt the crowdsourcing model as we know it. I will then discuss how human bias is reflected in the data which is being collected by means of crowdsourcing. Finally, I will present our work making use of fine-grained behavioral logs.

- **Personalization, Bias and Privacy**, Prof. Ricardo Baeza-Yates, Northeastern University
Date: 8 January 2021
Location: Online
Link: <http://www.cycat.io/january-seminar/>

Personalization can be seen as a positive bias towards each user. However, it also has negative consequences such as privacy loss as well as the filter bubble effect due to the feedback-loop that creates. In addition, the web system itself can bias the user interaction distorting the data used for personalization, particularly due to exposure bias. Our own biases also affect the personalization process, especially activity bias. Privacy also depends on the personalization level and the personalization level depends on the amount of interaction data available. In this presentation, we discuss the interaction of these three elements: personalization, bias and privacy.

- **Agency, Accounts and Accountability: Putting the Social into Explainable AI**, Prof. Rob Procter, University of Warwick
Date: 5 February 2021
Location: Online
Link: <http://www.cycat.io/february-seminar/>
Video: <https://youtu.be/yZZcC5Xfoiw>

I will examine what delivering explainable AI (xAI) means in practice, particularly in contexts that involve formal or informal and ad-hoc collaboration where agency and accountability in decision-making are achieved and sustained socially and interactionally. As an illustration, I will use an example from an earlier study of collaborative decision-making in screening mammography of how the participants make themselves accountable to one another. I conclude

by setting out a study programme for future research to help advance our understanding of xAI requirements.

- **Enabling participatory and procedurally-fair AI**, Prof. Min Kyung, University of Texas
Date: 26 March 2021
Location: Online
Link: <http://www.cycat.io/march-seminar/>
Video: <https://youtu.be/y0G5SBxUr5c>

As artificial intelligence (AI) is transforming work and society, it is ever more important to ensure that AI systems are fair and trustworthy and support critical values and priorities in organizations and communities. In this talk, I will first present empirical findings on people's trust and fairness around algorithms that make managerial and resource allocation decisions. My research suggests that techniques for distributive fairness are not sufficient for gaining people's trust in AI. Addressing this gap, I propose two frameworks for achieving procedurally-fair and participatory AI: a procedural justice framework that lays out considerations for procedural fairness in algorithmic decisions, and a participatory framework called WeBuildAI that enables people to build algorithms for their own communities. I present a case study of this framework with a nonprofit called 412 Food Rescue in which stakeholders used the framework to build a food donation matching algorithm and adjudicate equity and efficiency trade-offs in the algorithm.

- **Contesting Algorithms: Restoring the public interest in content filtering by artificial intelligence**, Prof. Niva Elkin-Koren, Tel Aviv University
Date: 8 December 2021
Location: Online
Link: <http://www.cycat.io/may-seminar/>
Video: <https://youtu.be/oC41h9wD0Dc>

In recent years, artificial intelligence (AI) has been deployed by online platforms to filter allegedly illegal expressions. AI filters carry censorial power which could bypass traditional checks and balances secured by law. This dramatic shift in norm setting and law enforcement is potentially game-changing for democracy. The opaque and dynamic nature of AI-based filters creates barriers to oversight. The system conceals critical value choices and tradeoffs. Currently, we lack adequate tools to hold these systems accountable. In this presentation, I propose to address this gap by an adversarial procedure – Contesting Algorithms. The rationale behind contesting algorithms is to deliberately introduce friction into dominant removal systems governed by AI. Algorithmic content moderation often seeks to optimize a single goal, such as removing copyright-infringing materials or blocking hate speech, while other values in the public interest, such as fair use or free speech, are often neglected. Contesting algorithms introduce an adversarial design which reflects conflicting values, and thereby may offer a check on dominant removal systems. The presentation will introduce the strategy of Contesting Algorithms, discuss its promises and limitations, and demonstrate how regulatory measures could promote the development and implementation of this strategy in online content moderation.