

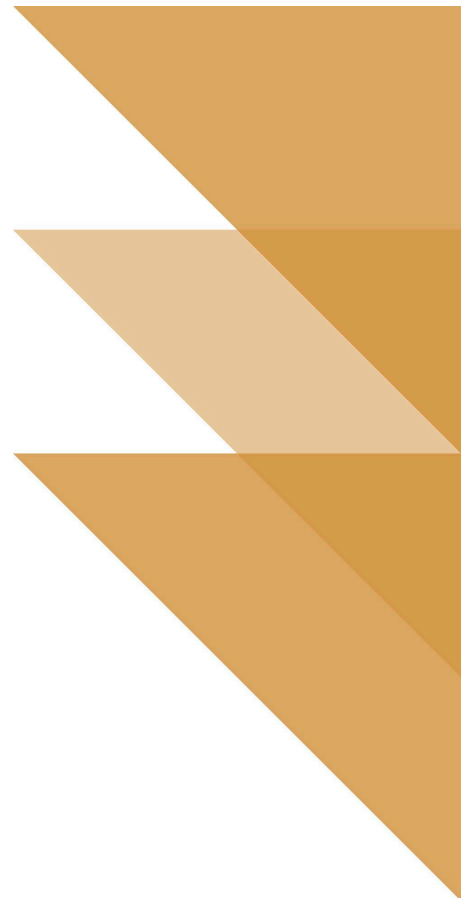
Co-located with the 14th ACM Conference on Recommender Systems



The 5th International Workshop on Health Recommender Systems

Organizers:

Alan Said,
Hanna Schäfer,
Helma Torkamaan,
Christoph Trattner



26th September 2020

Online, World



Copyright© 2020 for the individual papers by the papers' authors.

Copyright © 2020 for the volume as a collection by its editors.

This volume and its papers are published under the Creative Commons License Attribution 4.0 International (CC BY 4.0).

Preface

Digital health has provided more access to affordable health care, self-care, and quantified self. The COVID-19 pandemic in 2020 caused pervasive health-related measures, and health-oriented services, systems, and solutions have grown more than ever as a result. Therefore, individuals and clinicians are faced with a vast amount of health data and limited time for decision making. Recommender systems can improve digital health by supporting experts and individuals to lower the burden of choice overload and further to automate various processes in the health domain. The Health Recommender Systems (HRS) workshop is discussing multiple fields in which recommender systems can improve well-being, health, and self-awareness. The use of recommender systems in the health domain gives a new perspective to current discussions and challenges of recommender systems, including how to involve users in the recommendation process, as well as the need to account for crucial aspects of trust and privacy.

Following the four previous workshops, the focus of this workshop is to intensify the discussion on health promotion, health care, as well as health-related methods. This workshop also aims at strengthening the HealthRecSys community, at engaging representatives of other health domains into cross-domain collaborations, and at exchanging and sharing infrastructure. This volume contains the papers presented at the 5th international workshop on health recommender systems on September 26, 2020, held as part of the 14th ACM Conference on Recommender Systems. After a peer-review process with at least three reviewers per paper, six papers with the highest quality were accepted for presentation in the workshop.

The 2020 submission topics covered various goals, data types, algorithms, and subdomains of health. One part of the submissions focuses on systems for lifestyle and well-being, including nutrition, physical activity, sleep, mental health promotion, and care. The other part of the submissions is targeting the medical domain in areas of clinical decision support, personalized diagnostics and treatment, COVID19, electronic health records, and patients monitoring. HealthRecSys2020 contributions consider user-in-the-loop interfaces, active monitoring, context-awareness, personalization, user engagement, and behavior change. Reinforcement learning, neural networks, casual framework, dialog agents, ontologies, data mining, and recommender systems are among the frequently mentioned method-related keywords. The HRS chairs would like to thank the RecSys 2020 organizing committee, especially the RecSys workshop chairs for their support. We would also like to thank the authors, presenters, and PC members, whose efforts made the workshop possible.

September, 2020

Alan Said
Hanna Schäfer
Helma Torkamaan
Christoph Trattner

Organizing Committee

| | |
|--------------------|------------------------------|
| Alan Said | University of Gothenburg |
| Hanna Schäfer | University of Konstanz |
| Helma Torkamaan | University of Duisburg-Essen |
| Christoph Trattner | University of Bergen |

Program Committee

| | |
|-----------------------|------------------------------------|
| Shlomo Berkovsky | Macquarie University |
| André Calero Valdez | RWTH Aachen University |
| Morgan Harvey | Northumbria University |
| Santiago Hors-Fraile | University of Seville |
| Mohammed Khwaja | Imperial College London |
| Bernd Ludwig | University of Regensburg |
| Yelena Mejova | ISI Foundation |
| Jesus Omana | Telefonica Alpha |
| Iván Palomares | University of Granada |
| Panagiotis Symeonidis | Free University of Bolzano |
| Ingmar Weber | Qatar Computing Research Institute |
| Martin Wiesner | Heilbronn University |

Table of Contents

| | |
|---|-------|
| Keynote Abstract: Health Personalisation: From Wellbeing to Medicine | 1 |
| <i>Shlomo Berkovsky</i> | |
| On the Importance of Context: Privacy Perceptions of Personal vs. Health Data in Health Recommender Systems | 2-7 |
| <i>Laura Burbach, Poornima Belavadi, Patrick Halbach, Nils Plettenberg, Johannes Nakayama, Lilian Kojan and André Calero Valdez</i> | |
| Personalized User Modelling for Context-Aware Lifestyle Recommendations to Improve Sleep | 8-14 |
| <i>Vaibhav Pandey, Dhruv Deepak Upadhyay, Nitish Nag and Ramesh Jain</i> | |
| A Recommender System for Healthy and Personalized Recipes Recommendations | 15-20 |
| <i>Florian Pecune, Lucile Callebert and Stacy Marsella</i> | |
| A Dynamic Human-in-the-loop Recommender System for Evidence-based Clinical Staging of COVID-19 | 21-22 |
| <i>Yogatheesan Varatharajah, Haotian Chen, Andrew Trotter and Ravishankar Iyer</i> | |
| A recommender system for informal bibliotherapy | 23-27 |
| <i>Jatin Aswal and Nisheeth Srivastava</i> | |
| Recommending Safe Actions by Learning from Sub-optimal Demonstrations | 28-35 |
| <i>Lars Boecking and Patrick Philipp</i> | |

