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Editors

Psychology-Based Technologies, 1st Symposium

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Editors

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Preface

The production and marketing of technological products designed to help people in meeting their psychological needs is soaring. For example, virtual assistants who help us to train our cognitive processes (the so-called Brain Trainers), meditate and relax (such as mindfullness apps), choose partners and new friends (Facebook's algorithms, Tinder's or of Linkedin) are present in almost all our smartphones and in the future this type of application will expand in supporting, stimulating and, unfortunately, replacing almost all of our cognitive, psychological and relational functions.

Currently a part of the community of professionals in Psychology engages in evaluating and analyzing these products in people's lives. Undoubtedly it is a field of great interest and of considerable scientific, social and commercial impact in which scholars and professionals of human sciences (psychologists, but also sociologists, educators, economists, etc.) are permanently present. At the same time, in almost all the conferences in psychology, even with a very traditional approach, the theme of the intertwining of psychology and technology is gaining considerable space. Parallel to this by now consolidated field of research and application there is also a small but emerging international community of Psychologists (and others) that starting from consolidated psychological theories and a deep knowledge of the needs of human beings, conceives, designs and develops new technological solutions. The conception and production of technology therefore arises from Human Sciences.

Hence the first Symposium on Psychology Based Technologies (PsychoBit2019) organized jointly by Natural and Artificial Cognition Lab, University of Naples Federico II and Anthropos-Techne Association which aims to be a place where researchers and professionals can present and discuss technological production projects (even in an embryonic stage) based on scientific knowledge of the mind and human behavior. This first edition is the result of a series of symposia organized in the past years entitled "Anthropos and Techné" and is included in a week of congressional events dedicated to research in Psychology that will be held with the support of the University of Naples Federico II. PsychoBit2019, in fact it is an event connected to the XXXII Congress of the Italian Association of Psychology - section of Developmental and Educational Psychology and coordinates with the second edition of the Italian Conference on Atypical Neurodevelopment (ICAN19). In the first formulation of the organizational structure PsychoBit2019 was meant to be a friendly meeting for a small community of friends. Unexpectedly the call for paper has attracted some interest and thirty articles have been submitted. Moreover a consortium of a research project funded by the European Union, Docent, asked us, with our great pleasure, to organize the final event in our symposium. In short, it seems that a community has set in motion and we hope that this great effort of passion and work can be maintained and developed in the years to come.

This volume contains the 30 papers presented at the Fist Symposium on Psychology-Based Technologies (PsychoBit2019). Each submission was reviewed by at least two international Program Committee members. To reach a final decision there was a Program Committee discussion period. The program also includes three invited talks. We would like to thank all members of the Program Committee for providing the reviews.

Committee Members

Chairs

- Orazio Miglino – University of Naples Federico II and ISTC-CNR
- Michela Ponticorvo – University of Naples Federico II

Organizing Committee – University of Naples Federico II

- ànthropos | technè
- Docent Project Consortium
- Antonio Cerrato
- Luca Fusco
- Daniela Pacella
- Anna Parola
- Luigia Simona Sica

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- Beatrice Ligorio – Università degli Studi di Bari "Aldo Moro"
- Mauro Maldonato – Università di Napoli Federico II
- Davide Marocco – Università di Napoli Federico II
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- Domenico Parisi – ISTC-CNR
- Angelo Rega – IRFID srl
- Carlo Ricci – Università Pontificia Salesiana
- Giuseppe Riva – Università Cattolica – Milano
- Franco Rubinacci – Università di Napoli Federico II
- Gennaro Ruggiero – Università della Campania – Luigi Vanvitelli
- Massimiliano Schembri – ISTC-CNR
- Luigi Pagliarini – Academy of Fine Arts of Macerata

Invited Speakers

Robot and Children: HRI and Theory of Mind

Prof. Antonella Marchetti

Università Cattolica del Sacro Cuore di Milano

Machine Learning for Embodied and Situated Agents

Prof. Stefano Nolfi

Institute of Cognitive Sciences and Technologies (CNR-ISTC)

Challenges and Caveats Ahead of the Digital Revolution: Introducing New Approaches for Embodied Cognition and Social Dynamics in Basic and Translational Science

Prof. Elizabeth Torres

Rutgers, The State University of New Jersey

Research Projects and Labs Showcase

DoCENT (Digital Creativity ENhanced in Teacher Education) [www.docent-project.eu] – Erasmus Plus – KA2 – GAn° 2017-1-IT02-KA203-036807
DoCENT project's main goal is to make teacher educators adopt pedagogical strategies that foster creativity and innovation. DoCENT model will use the following approaches: manipulative technologies, robotics, digital making and digital games, developing a teacher educator competence framework, a MOOC on digital creativity and a serious game.

ACCORD (Attain Cultural integration through COnflict Resolution skill Development) [www.accord-project.eu] – Erasmus Plus – KA3 - Grant Agreement n° 580362-EPP-1-2016-1-IT-EPPKA3-IPI-SCO-IN
ACCORD aims support teachers in handling conflict and dealing with cultural diversity by creating, assessing and upscaling an integrated online pedagogical practice that combines conceptual material through MOOC delivery and Serious Games for practical, experiential and hands-on learning.

ALEAS (Adaptive LEArning in Statistics) [www.aleas-project.eu] – Erasmus Plus KA2 – GA n° 2018-1-IT02-KA203-048519
The core of the ALEAS project is the development and implementation of an adaptive learning system (ALEAS) that will be realized exploiting the most innovative and digital technologies embedded in an open access framework (MOOC), by developing an APP for statistics exercises based on the Adaptive Tutoring Systems.

STOP (STop Obesity Platform) [stopproject.eu/] – H2020 MSCA-RISE project no 823978 - The STOP project brings together an interdisciplinary and intersectoral group of subject matter experts from industry and academia under one umbrella, to address the health societal challenge of obesity with the specific objectives of mitigating the enormous and growing Health Care costs of obesity and related health issues (like heart disease, diabetes, arthritis, liver disease, gallstones, cancer, dementia) that burden European citizens. The STOP project addresses this need through the foundation of an innovative platform to support persons with obesity with a better nutrition under supervision of healthcare professionals.

METAPLAT (Development of an Easy-to-use Metagenomics Platform for Agricultural Science) [http://www.metaplat.eu/] – H2020 MSCA-RISE project no 690998 - The aim of this project is to bring together experts from the academic and non-academic sectors and to create an easy-to-use integrated hardware and software platform. This will enable the rapid analysis of large metagenomic datasets. It will provide actionable insights into probiotic supplement usage, methane production and feed conversion efficiency in cattle.

CODINC (Coding for Inclusion) ERASMUS Plus KA3 592121-EPP-1-2017-1-BE-EPPKA3-IPI-SOC-IN - The "Coding for Inclusion" aims at fostering STEM education of disadvantaged youth through an inclusive educational approach based on a peer-learning pedagogical method for formal and non-formal educational contexts in Europe. The "Coding for Inclusion" project will adapt the Capital Digital methodology and training programme to different contexts and will apply them in 5 European countries, namely Belgium, Cyprus, Germany, Italy and Spain.

EMOTION.EXE (Emotional Mediated Online Training for Introspection, Observation, Novelization and Expression) - Research Project funded by Regione Lazio (Law: L.R. 13/08) CUP B56C18000590002 - The project aims to develop and implement an "Emotional Gym" where the users with an high risk of social exclusion could acquire new emotional competences. The Emotional Gym of EMOTION.EXE project is an application where the user, guided by an artificial tutor, will be able to explore new interests and motivations.