GET DIGITAL

– an online series on mHealth organised by the ECNP Digital Health Network

Digital approaches are fundamentally changing traditional ways of diagnosis, monitoring, management, and treatment worldwide. The Network of Digital Health offers monthly online presentations on mHealth related research.

How to attend: To receive link and password please send an email to network_digitalhealth@ifss.kit.edu including your name and affiliation.
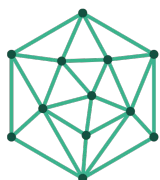
Dates in 2022

February 8th: Jukka-Pekka Onnela (Harvard University, USA) - Dealing with Missing Data in Smartphone-based Digital Phenotyping (16:00-17:00 CET)

March 2nd: John Torous (Harvard University, USA) - Digital Phenotyping with mindLAMP: Research and Clinical Updates" (16:00-17:00 CET)

April 12th: Matthias Mehl (University of Arizona, USA) - Towards the objective tracking of everyday social interactions and language use (17:00-18:00 CEST)

May 10th: Susan Murphy (Harvard University, USA) - Optimizing your digital health JITAI using a Micro-Randomized Trial (16:00-17:00 CEST)

June 14th: Eduard Vieta & Diego Hidalgo (University of Barcelona, Spain) - Identifying digital biomarkers of illness activity and treatment response in Bipolar Disorder (16:00-17:00 CEST)

Digital Health applied to the clinical research of brain disorders
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February 8th: 16:00-17:00 CET

Jukka-Pekka Onnela (Harvard University, USA)

**Dealing with Missing Data
in Smartphone-based Digital Phenotyping**

Nearly all studies that collect either smartphone or wearable data have significant amounts of missing data. Some of the missingness is by design, for example due to sensor sampling schedule, but most of it is due to behavioral and technological factors. Ignoring missing data can lead to strong biases and may completely invalidate inferences. I will discuss the importance of working with raw data, the challenges posed by missing data, and will propose solutions for addressing the problem in specific instances.

March 2nd: 16:00-17:00 CET

John Torous (Harvard University, USA)

**Digital Phenotyping with mindLAMP:
Research and Clinical Updates**

The potential of smartphone apps and digital phenotyping to improve clinical outcomes and increase access to care can only be understood by real world applications. This talk will explore various data streams and clinical use cases with a focus on translating data science and research methods into practical tools. Starting with designing digital tools with patients and sharing results back as a foundation, both observational and clinical studies will be discussed towards creating diverse teams necessary to advance care with apps.
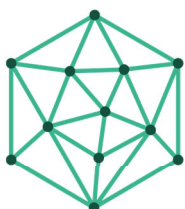
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April 12th: 17:00-18:00 CET

Matthias Mehl (University of Arizona, USA)

Towards the objective tracking of everyday social interactions and language use

How much time do we spend talking? How many of our daily interactions are deeper exchanges versus just small talk? And what do these social and language behaviors tell us about our health? These seemingly trivial questions illustrate how little is known about our everyday social interactions and language use. I have developed and validated the Electronically Activated Recorder (EAR) to track people's naturally occurring (acoustic) social lives. The EAR is a digital audio recorder that intermittently samples snippets of ambient sounds. While much of the past research with the method relied on human annotation and transcription, recent advances in audio signal processing now allow exploring the objective tracking of these real-world behaviors in automatic and privacy preserving ways.
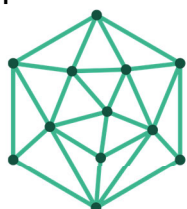
May 10th: 16:00-17:00 CET

Susan Murphy (Harvard University, USA)

Optimizing your digital health JITAI (Just-in-Time Adaptive Intervention) using a Micro-Randomized Trial

A formidable challenge in designing a digital health intervention is to determine when and in which context it is best to deliver treatments to individuals. Operationally this involves the construction of decision rules that input the current context of an individual and output a recommended treatment. Micro-randomized experiments, in which each individual is randomized many times can be used to provide data for constructing these decision rules. Further there is much interest in personalization during the experiment, that is, in real time as the individual experiences sequences of treatment. Here we discuss our work in designing online reinforcement learning algorithms for use in personalizing mobile health interventions.

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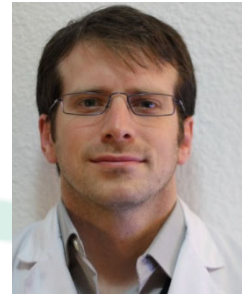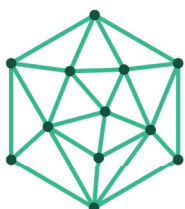ECNP Network

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June 14th: 16:00-17:00 CET

Eduard Vieta & Diego Hidalgo
(University of Barcelona, Spain)

Identifying digital biomarkers of illness activity and treatment response in Bipolar Disorder

We are going to review the current evidence on wearables digital biomarkers in bipolar disorder (BD) from euthymic states to acute episodes. Additionally, we will present preliminary data on the INTREPIBD study using multimodal data from wearables, aimed at identifying physiological digital biomarkers of illness activity during acute episodes in BD analyzed with deep learning techniques. Finally, we are going to discuss potential applications of this emerging field in real-world clinical practice, ongoing challenges and future perspectives.

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