29th IOPS Winter Conference, 12-13 December 2019

Conference host: Leiden University

Location: Zaal 1A20, Pieter de la Court, Wassenaarseweg 52, 2333 AK, Leiden. (https://www.universiteitleiden.nl/en/locations/pieter-de-la-court)

Hotels:

https://www.booking.com/city/nl/leiden.nl.html?aid=303947;label=leiden-nvwkVo_NK2sKfoHkh4X60QS111932257159:pl:ta:p135:p2%E2%82%AC52:ac:ap1t1:neg:fi:tikwd-276959020:lp1010722:li:dec:dm;ws=&gclid=Cj0KCQjwiILsBRCGARIsAHKQWLMCvUYsiouXvgbGGEwcOYiN0PjK8EkQ5gE-YeYmkQXGjWHVNe0BdIgaAskAEALw_wcB

Prior to the conference – Thursday December 12th

10.30 – 12.00 **IOPS Board meeting** (room 5A19)
11.30 – 12.00 **IOPS PhD student meeting** (room OA28 (filmzaal)
12.00 – 13.00 R**egistration and Lunch (FSW Café, ground floor)**

Program Thursday December 12th (Room 1A20)

13.00 – 13.05 **Official opening** by Mark de Rooij *Professor of Methodology and Statistics of Psychological Research, Leiden University*

13.05 – 13.30 **Presentation Hilde Augusteijn** *University of Tilburg*
Posterior Probabilities in Meta-Analysis: An Intuitive Approach of Dealing with Publication Bias

13.30 – 13.55 **Presentation Daniela Crisan** *University of Groningen*
Usefulness versus Complexity: Practical Implications of IRT Model Selection

13.55 – 14.20 **Presentation Sanne Willems** *Leiden University*
Optimal Scaling transformations to model non-linear relations in GLMs for categorical and ordinal data

14.20 – 14.45 **Presentation Jacqueline Zadelaar** *University of Amsterdam*
Are Individual Differences Quantitative or Qualitative? An Integrated Behavioral and fMRI MIMIC Approach

14.45 – 15.15 **Break**

15.15 – 15.40 **Presentation Jonas Haslbeck & Oisín Ryan** *University of Amsterdam & Utrecht University*
Recovering Bistable Systems from Psychological Time Series

15.40 – 16.05 **Presentation Richard Artner** *KU Leuven-University of Leuven*
Statistical inference via all-subset regression

16.05 – 16.50 **Keynote speaker Elise Dusseldorp** *Leiden University*
Machine learning in psychology – two examples

Machine learning in psychology:two examples
Machine learning involves a large variety of algorithmic methods such as classification and regression trees (CART; Breiman et al., 1984) and random forests (Breiman, 2001). One might think that these methods are invented far away from the social sciences. However, already in 1963 two sociologists proposed Automatic Interaction Detection, a method that is regarded as the predecessor of CART.
In this presentation, we focus on two methods, Qualitative Interaction Trees (QUINT; Dusseldorp et al., 2014) and meta-CART (Li et al., 2017), that use the CART algorithm in a modified form to tackle problems in treatment efficacy research. Both methods aim at explaining the variance in a treatment effect, so-called treatment effect heterogeneity. The underlying idea is that the effect of a treatment may depend on person characteristics (e.g., age). QUINT uses randomized controlled trial data to detect homogeneous subgroups of patients with regard to their treatment outcome. That way, QUINT makes it more easy to tailor a treatment to the patients that most profit from it. Meta-CART is used in meta-analyses to detect homogeneous subgroups of studies with regard to their combined treatment effect size. It facilitates in, for example, detecting the most effective treatment ingredients. An inconvenience of these methods is that due to their algorithmic nature the estimated treatment effects in the subgroups (i.e., the leaves of the tree) are overly optimistic. We show some new advances to overcome this inconvenience using illustrations with psychological data.

16.50 – 17.10 **Plenary meeting IOPS staff and students**

17.10 – 18.15 **Poster session & Drinks**

Giuseppe Arena *University of Tilburg* - Modeling memory decay in social network analysis: a Bayesian approach

Felix Clouth *University of Tilburg* **-** Quality of life profiles of colon cancer survivors: A three-step latent class analysis

Simon Kucharsky *University of Amsterdam*- Model based real-time testing of habituation

Marlyne Meijerink *University of Tilburg* – The study of social interactions over time: A relational event modeling approach

Anton Olsson Collentine *University of Tilburg* – False certainty in meta-analysis: Theoretical vagueness in psychology leads to hidden uncertainty in meta-analytic summaries

Chuenjai Sukpan *Utrecht University* – How to evaluate *causal dominance* in lagged effect models

Shiya Wu *Utrecht University* -Expert Prior Elicitation in Bayesian Adaptive Survey Design.

Jacqueline Zadelaar *University of Amsterdam* – Development of Decision Making based on Internal and External Judgement: A Hierarchical Bayesian Approach

19.00 **Conference dinner**

Program Friday December 13th

09.30 – 10.00 **Registration / Coffee**

10.00 – 10.45 **Presentation IOPS Best Paper Award Winner Robbie van Aert**

10.45 – 11.05 **Break**

11.05 – 11.30 **Presentation Shuai Yuan** *University of Tilburg* – A novel variable selection method in K-means clustering based on Sparse Principal Component Analysis

11.30 – 11.55 **Presentation Adela Isvoranu** *University of Amsterdam* – Network Models of Psychosis

11.55 – 12.20 **IOPS Best Poster/Presentation Award Ceremony**

12.20 – 12.45 **Closing** by Mark de Rooij

12.45 **Take away lunch** (FSW Café, ground floor)