Large-scale surveys and technology innovation event

Venue: Charles Bell House, University College London (Bloomsbury Campus),
43-45 Foley Street, London, W1W 7TS

Date and time: Tuesday 25 June 2019, 10:00 – 18:00

Presentations

Session 1: Health and medical

Dr Denislav Boichev, CheckPoint Cardio

CheckPoint Cardio Ltd has developed one of the first systems for real-time online patient telemonitoring with a fully operating cardiological medical centre for 24/7 observation, diagnostics, patient health management, and emergency reaction services. Through smart wearable devices, the system collects 1, 3-9, or 12 lead ECG, SpO2, pulse, respiration rate, non-invasive blood pressure trend, activity and location of the patient. A digital medical lab within the telemedical centre extracts and analyses raw vital data, drawing on expertise from real medical professionals, IT services, machine learning specialists and software developers.

Dr Mert Aral, Medopad Health

Medopad Health uses technology and artificial intelligence to transform the way we use and interact with health data. Their data collection solution allows for real-time real-world data collection, and is fully configurable based on researchers' needs. This is further complemented by educational materials and vital sign data capture through integration with a large and diverse library of wearables. Dr Aral's presentation will also cover Medopad's more recent initiatives in development of new digital biomarkers and therapeutics, with the aim of building collaborative partnerships with academics to support research and development.

Dmitry Alexeev, Atlas Biomed Group

Atlas Biomed Group's Microbiome Test offers individuals an easy way to learn about their gut bacteria. The at-home sample collection kit is posted off for analysis, and individuals can login online to see their results. The Atlas Microbiome Test is currently involved in a growing number of food and clinical trials in areas such as cancer immunotherapy, IBD, IBS, ADHD, Parkinson's, and chemotherapy side effects. It is the only UK and EU certified IVD device, which gives a unique opportunity to participate in clinical trials without the additional burden of ethical approval. Atlas also provides a SAS platform for microbiome analysis, including most of the frequently used statistical methods and interactive visualisations.

Session 2: Behaviours and social media data

Dr Patrick Esser, Centre for Movement, Occupation and Rehabilitation Sciences at Oxford Brookes University

Gait can be seen as an overall indicator of overall bodily function. Oxford Brookes University has succeeded in developing a software package which provides an objective, quick and reliable way of measuring people's gait, based around a single inertial measurement unit attached to the lower spine. Besides measurements of validity in a healthy population, this system is also valid in neurological populations, as well as in both the young and old. Gait has and is currently been used as an outcome measurement in national longitudinal cohort studies (SABRE, MRC Insight 46, Whitehall II) as well as international studies in China, Canada, Jordan and Mexico. This presentation will discuss key outcome parameters, highlight recent findings from these large well-defined datasets and present the versatility and usability of gait as a quick, objective and relatively cheap outcome measurement. Finally, the audience will be able to download a stripped down version of the gait application, which can be used on their own smartphone. Dr Esser leads the Movement Science Group based within the Centre for Movement, Occupation and Rehabilitation Sciences at Oxford Brookes University.

Dr Kirsten Rennie, MRC Epidemiology Unit, University of Cambridge

Wrist-worn raw accelerometry has particular advantages over other instruments (i.e. self-report and more traditional accelerometry), not only in terms of accuracy, improved validity and inferential potential, but also increased transparency in terms of data processing. This presentation will provide insights into the challenges, learnings and newly developed methods for implementing wrist-worn raw accelerometry in large-scale studies, particular settings including low and middle income countries (LMICs, e.g. Cameroon, Malawi, Kenya, Brazil, South Africa) and across the life course (from infants to 90 year olds). Dr Rennie is a Senior Research Associate leading the development of research on physical activity and diet in patient populations for the NIHR Cambridge Biomedical Research Centre (BRC) Theme on Diet, Lifestyle and Nutrition. She has worked as an epidemiologist in both academic and industry settings, including MRC Human Nutrition Research, Unilever, University College London and University of Ulster.

Hannah Carpenter, Kantar

Kantar collects highly detailed data on consumer spending and nutrition. These data are currently widely used commercially, and to a lesser extent in academic and government research. Kantar maintains representative longitudinal panels to collect details of all grocery purchases a panel member makes. With data traditionally collected through barcode scanning, and more recently through an app, Kantar are able to match the "big 8 nutrients" (e.g. carbohydrates, sugar, salt, fats, calorific values) to the food and drink products purchased to give a picture of the "health of the nation's shopping baskets". In addition to this, a subset of panellists complete a daily diary of the food and drink they have consumed, which is matched to nutrition information about the products they have bought, leading to an accurate picture of their diet. Some of this technology has already been used on the innovation panel of Understanding Society (the UK Household Longitudinal Study).

Curtis Jessop, National Centre for Social Research

Data from social media platforms offer researchers the promise of large volumes of rich, 'naturally occurring' information, quickly, and cost-effectively. As their use in social science research becomes more established, this presentation will look at how linking social media data and survey data may enhance both and the opportunities this may present for researchers, drawing on a pilot study looking at political attitudes in the run-up to the 2017 UK General Election as an example. The presentation will also look at some of the practical and ethical challenges of linking social media and survey data.

Session 3: The wider environment and advances in survey data collection

Dr Adam Cooper, UCL Department of Science, Technology, Engineering and Public Policy

'Contextual thermography' is about the application of thermal imaging technology in homes to understand the relationship between heat, energy and people in natural social settings to better identify opportunities for innovation and issues with current forms of technology deployment. This presentation looks at the novel application of nearly available technology in this new interdisciplinary method for energy research. Dr Adam C Cooper is an applied interdisciplinary social scientist with over 10 years direct experience of the UK Civil Service. His focus is on the use of technical advice for (mainly energy) policy, and developing new field methods for socio-technical research.

Dr Pippa Bailey, Ipsos MORI

People cannot always accurately recall specific events and experiences, especially those that are commonplace and regular. This presentation will share how technology, in the form of near field communication (NFC) sensors, can be applied to research to ensure those key moments are captured. NFC sensors can be embedded in customised stickers for research participants to stick on relevant surfaces, such as their medicine cabinet or fridge. These stickers then act as both a reminder to participants to report back and also easily take people straight to a web-based questionnaire when they simply touch their phone to the sticker (without the need for participants to download an App or special software). Pilot work, looking to get a better understanding of MS suffers in Spain, showed us that asking participants to use these NFC stickers around their homes demonstrated that, versus a traditional mobile survey, we could capture more moments and data that was closer to the moment which ultimately led us to greater accuracy in our insights.

Steve Ginnis, Ipsos MORI

Voice assistants (such as Amazon Echo, Google Home etc) are becoming more common, with 8% of households now having one, and 65% of people seeing them as the future. Nearly everyone uses their phone's voice assistant (Siri, OK Google) occasionally, especially when at home or in their car. Ipsos is developing new ways of deploying surveys which allow them to be completed via voice assistants. This presentation will share how voice interaction can enhance survey research, providing more immediate interaction and removing the need to write and type. These forms of interviewing are very natural, which can make these surveys highly engaging. In addition, early research indicates that use of voice means that people provide more depth in their response to open-ended questions – the resultant data can then be processed via text analytics. With the advent of machine learning and artificial intelligence, intelligent surveying is being developed which would mean that participants could determine what is focussed on and drive the conversation to issues/topics which are most pertinent to them.

David Wright and Stephanie Pineda, Kantar

Kantar has invested in 'Conversational AI' technology – the development of natural language processing and messaging interfaces to allow conversations with people in the environments that suit them, and react to their responses in a way previously only possible with qualitative interviewers. This presentation will look at the latest application: a voice-based survey run on a smart speaker. Currently at developmental stage, this will be a chance to see how some kinds of survey evidence will be collected in the future.