

Think Spatial

The UCSB brown-bag forum on spatial thinking

Presents

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Tapping into the Human Data Space: Predicting the Treatment Success of Obese Children

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12:00 p.m.

3512 Phelps Hall

ABSTRACT:

Childhood obesity is an increasingly pervasive problem. Traditional therapy programs are time- and cost-intensive. Furthermore, success of therapy is often not guaranteed. Typically, therapeutic success is determined by comparison of body mass index (BMI) before and after a therapy. We present a Data-analytical approach that provides predictions of future BMI changes before conducting a therapy. Parameters like age as well as heart rate during a standardized exercise are considered. By predicting outcomes of a therapy, healthcare practitioners could personalize standard therapies and improve the outcome. We collected data from randomized clinical trial and trained Machine Learning models to estimate whether BMI will decrease after therapy with 85% accuracy. Accuracy of predictions is compared with domain experts' predictions. Further, we present empirical results of the domain experts' perception regarding the proposed information system. The resulting system provides positive evidence as a tool for personalized medicine.

Bio:

Wolfgang Maaß is professor in Business Informatics and professor in Computer Science (co-opted) at Saarland University, scientific director at the German Research Center for Artificial Intelligence (DFKI), and adjunct professor at Stony Brook University, Health Sciences Center School of Medicine, NY. He studied Computer Science at the RWTH Aachen and the Saarland University. His Ph.D. in Computer Science at the Saarland University was funded by the German National Science Foundation (DFG). He was post-doc researcher at the Institute of Technology Management (ITEM) and Media and Communications Management Institute (MCM) at the University of St. Gallen, Switzerland where he also received his habilitation by the Department of Management. Previously he was lecturer at the University of St. Gallen and professor of media and computer science at Furtwangen University of Applied Sciences, Germany. He was guest professor at the Department of Bioinformatics and Computational Biology at MD Anderson Cancer Center, University of Texas, TX and at the Department for Biomedical Informatics at Stony Brook University Health Sciences Center School of Medicine, NY. In his research, he investigates the transformation of industries by applying methods of Artificial Intelligence.

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