

Towards electronic digital music practice for neurodiverse people

Till Bovermann
Department of Media
Aalto University
Helsinki
till.bovermann@aalto.fi

Julian Parker
Department of Signal
Processing and Acoustics
Aalto University
Helsinki
julian.parker@aalto.fi

Ramyah Gowrishankar
Department of Design
Aalto University
Helsinki
ramyah.gowrishankar@aalto.fi

Mila Moisio
TAUKO
Helsinki
mila@taukovaatteet.com

Jussi Mikkonen
Department of Design
Aalto University
Helsinki
jussi.mikkonen@aalto.fi

Vesa VÃd'limÃd'ki
Department of Signal
Processing and Acoustics
Aalto University
Helsinki
vesa.valimaki@aalto.fi

ABSTRACT

This paper gives an overview on the DEIND project which aims to connect neurodiverse people with the field of contemporary electronic and digital music practice. In pursuit of this, people with autistic spectrum disorders are invited to take part in the design process of electronic instruments.

To facilitate music practice, we aim for a holistic instrument experience rather than a modular approach in which the underlying modules of electronic instruments may become too evident and possibly confuse the player too much.

The close integration of target group members encourages a bilateral learning process: on the one hand, there is an intense and fruitful experience for the participants developing, on the other hand, involved researchers will identify design challenges specific to the target group yet very likely reveal new perspectives on the broader view of their respective area of research.

1. INTRODUCTION

The overarching theme of this project is to connect autistics with the field of contemporary electronic and digital music practice. In pursuit of this, people with autistic spectrum disorders (associated with our partner organisations *Nuorten YstÃd'vÃd't* and *Resonaari Music School*) are invited to take part in the design process of electronic instruments. The close integration of target group members ensures on the one hand an intense and fruitful experience for them, on the other hand, it opens the opportunity for the involved researchers to identify challenges that are spe-

cific to this group yet reveal new perspectives on the broader view of their research area.

Due to its nature, this investigation is laid out in an interdisciplinary manner, interweaving aspects of research in fields as diverse as interaction design, product design, new instruments for musical expression (NIME), music therapy, sound synthesis and computer science. With the current in-house partners (involved are *Department of Media*, *Department of Design* and *Department of Signal Processing and Acoustics*) as well as our external partners (*Nuorten YstÃd'vÃd't* and *Special Music Centre Resonaari*), we cover most of those areas, but plan to extend the list of partners on an international level (e.g. in Germany, the Netherlands and Australia) over the course of the starting grant.

In order to get this larger project started, we hereby apply for support from Aalto Media Factory for the initial phase of the project in the form of infrastructure, expertise and financing. With its help, an initial design iteration will be carried out in which instrument prototypes based on electronically enhanced textiles will be developed. Alongside, we aim for attending and organising public events as well as publications in international journals and conference proceedings. Additionally, the grant will help to form groundwork for a large-scale research application, possibly on an EU level, involving a collaboration network of international project partners.

2. PROJECT OUTLINE AND DESIGN CYCLE

Here, we talk about the members of the group and which skills they contribute. Also, the design cycle is introduced and explained.

3. FIRST ITERATION

In which we give an overview about the first design iteration.

3.1 initial workshop

Tells that we had a kick-off meeting with all contributing members followed by a one-day trip to our project partner Nuorten Ystäväliitto in Imatra. This was followed by an initial workshop day at which we discussed arising challenges (tell which!).

We came up with possible ideas for the system design (give examples for the prototype ideas and why they were considered).

3.2 instrument prototyping

We decided to develop two of the many ideas further, namely the rhythmic interaction part and the idea on room modes.

3.2.1 audio prototyping

3.2.2 textile interface prototyping

3.3 field trip

3.4 data analysis

3.5 lessons learned

4. CONCLUSION AND OUTLOOK

5. ACKNOWLEDGMENTS

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