tomgurion

Non-verbal communication in virtual reality

contact

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programming

data analysis: python and the scipy stack

creative tech: max, pure data, arduino, processing, unity, blender

server side: elixir with phoenix or plug, python with django or flask

web: javascript, vue.js, jquery, bootstrap

tools: git, docker

education

Since 2016 **PhD in Media and Arts Technology** Queen Mary University of London

Thesis title: Exploring listeners non-verbal cues in multiparty social interactions using virtual reality

Supervisor: Prof. Patrick Healey and Dr. Julian Hough

What do we do as listeners in conversation? How our behaviour affects the conversational flow and turn taking? What are the behavioural differences between addressees and side-participants? This thesis aims to tackle these questions. It uses virtual reality technologies to explore listeners non-verbal cues in multiparty social interactions. Findings from this research can inform new technologies to use socially relevant non-verbal cues in communication. They can be used to implement conversational agents with appropriate listening behaviours. They might also enable hybrid approaches that automatically manipulate some of the behaviours of listeners in VR. These can open new possibilities to enrich the social life of those lacking social skills, or reduce the need to constantly present an undivided attention in mediated conversations.

Activities
- Organising the Virtual Reality special interest group.
- Running data analysis workshops.

2011–2015 **MA in Music Technology** Bar-Ilan University

Exceptional distinction (97%)

Thesis title: An Audio-Only Augmented Reality System for Social Interaction

Supervisors: Prof. Eitan Avitsur and Dr. Nori Jacoby.

This thesis examines how an interactive environment might facilitate social interaction by developing and evaluating a novel system for joint music consumption by a group of users in the same place and time. The system uses relative locations measured using a Bluetooth signal, and generates an immersive personalized augmented musical environment that depends on the location of its participants. Two experiments tested the system in the context of a silent disco party, using the system's relative position signals as well as video tracking to evaluate the experience of users with and without prior acquaintance. The results showed that for both groups, the system promoted openness and increased the social interaction between users.

Activities
- Organising the weekly seminars of the Music Technology programme.

2010–2011 **Diploma studies in Music Technology** Bar-Ilan University

2006–2011 **BSc in Mathematics and Music** Haifa University

Activities
- Participating in the excellence programme of the department of mathematics.
- Taking part in building and maintaining the computer lab of the music department. Working as a recording and mixing engineer in projects by the music and the art departments.

experience

2014–2016 **Python management server developer** XtremIO
Working on the management server of an enterprise storage array. Developing automated maintenance procedures such as system upgrades, hardware replacements, restores, migrations, etc.. Implementing high-level and interactive communication protocols between clients and server.

2012–2014 **Music cognition research assistant** Freelance
Generating stimuli, executing music cognition experiments, and analysing experiments data.
Working with Prof. Zohar Eitan from Tel-Aviv University and Dr. Roni Granot from the Hebrew University.
- Generated audio stimuli according to requested mathematical formulas (e.g. Shepard tones).
- Developed GUI application to run music cognition experiments with visual stimuli.
- Analysed recorded music using audio features extraction tools.

2014 **Python and Django tutor** Freelance and with Udi Oron
Teaching programmers in hi-tech companies and independent developers. Developing teaching materials as well as teaching and assisting and class.

2014 **Full-stack web developer** Shachar web
Developing ERP web application with python and django on the server side and html, javascript and jquery on the client side.

2009–2013 **Math tutor** Freelance and at HighQ
Teaching mathematics from junior high to high school including preparation for matriculation exams. Teaching BSc students linear algebra A and B, calculus A and B, discrete mathematics, probability, statistics and more. Teaching classes at HighQ toward 4 units matriculation exams.

publications

Gurion, T. and Jacoby, N. (2013) Audio-Only Augmented Reality System for Social Interaction. In: Stephanidis C. (eds) HCI International 2013 - Posters' Extended Abstracts. HCI 2013. Communications in Computer and Information Science, vol 373. Springer, Berlin, Heidelberg.

conferences

2018 **The Future of Social Cognition workshop** Norwich
Poster presentation

2013 **International Symposium on Technology and Society** Toronto
Talk

2013 **HCI International** Las Vegas
Poster presentation

awards

Silver prize in The 2009 Global U8 Consortium Mathematics Contest.