ÁGOSTON TÖRÖK

researcher & data scientist

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EXPERIENCE

Data scientist and R&D Lead

Synetiq ltd.

Aug 2015 – ongoing Budapest, HU

Understanding human emotions in biosignal data with machine learning and statistical tools.

- Took part in the development of a large scale analysis pipeline that handles 200 new testers' physiological data every month
- Used hidden Markov modeling, deep learning, ensemble models to find emotional states
- I also function as the R&D Lead and am responsible for the growth of our "know-how"

Research fellow

Institute for Computer Science and Control, Hungarian Academy of Sciences

Jan 2017 – ongoing Budapest, HU

Working on interdisciplinary research between computer science, congitive science and psychology.

- Developing a research program to study the cognitive aspects of autonomous cars
- Carrying out research to explore how multisensory perception works in virtual reality
- Teaching Multivariate statistics, Introduction to spatial cognition, and supervising thesiswork at ELTE

Research associate

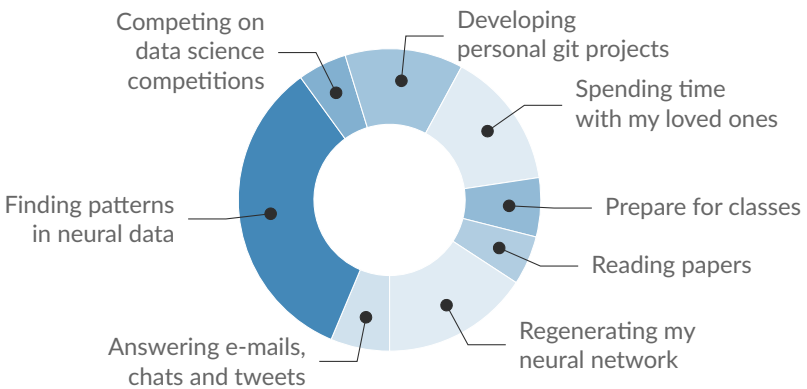
Brain Imaging Centre, RCNS, Hungarian Academy of Sciences

Sept 2013 – Dec 2016 Budapest, HU

Established own research direction on the field of spatial cognition.

- Learnt to use and analyze EEG, eyetracking, and behavioural data
- Won 4 research grants, 5 travel grants and took part in several research projects in Europe and overseas
- Done research projects at UCL; UTexas, Austin, Aix-Marseille University, Technion, University of Oldenburg

A DAY OF MY LIFE



LIFE PHILOSOPHY

"Everything is theoretically impossible, until it is done."

MOST PROUD OF

Committee chair
Invited co-chair of the technical program committee of CogInfoCom2016

Invited speaker
I was honoured to be invited by Prof. Hans Colonius to give a talk at the University of Oldenburg

Interdisciplinary link
I successfully worked together with engineers, geographers, psychologists, linguists, and mathematicians

STRENGTHS

Hard-working (17/24) | Creative | Fast learner

EEG | GSR | HR | Eyetracking | Python | R | Matlab | JS | Unity3D | HMD | CAVE | Augmented Reality

LANGUAGES

Hungarian
English
Italian

EDUCATION

PhD in Cognitive Psychology

Eötvös Loránd University

Sept 2011 – Dec 2016

Thesis: Spatial perception and cognition, insights from experiments in virtual reality

M.A. in Cognitive Psychology

Eötvös Loránd University

Sept 2006 – June 2011

SELECTED PUBLICATIONS

Journal Articles

- Török, Ágoston, Andrea Kóbor, et al. "Temporal dynamics of object location processing in allocentric reference frame". In: *Psychophysiology*, n/a–n/a. ISSN: 1469-8986. DOI: 10.1111/psyp.12886.
- Nadasdy, Zoltan et al. (2017). "Context-dependent spatially periodic activity in the human entorhinal cortex". In: *Proceedings of the National Academy of Sciences*. DOI: 10.1073/pnas.1701352114.
- Török, Ágoston, Elisa Raffaella Ferrè, et al. (2017). "Up, Down, Near, Far: An Online Vestibular Contribution to Distance Judgement". In: *PLOS ONE* 12.1, pp. 1–12. DOI: 10.1371/journal.pone.0169990.
- Honbolygó, Ferenc et al. (2016). "ERP correlates of prosody and syntax interaction in case of embedded sentences". In: *Journal of Neurolinguistics* 37, pp. 22–33.
- Török, Ágoston, Daniel Mestre, et al. (2015). "It sounds real when you see it. Realistic sound source simulation in multimodal virtual environments". In: *Journal on Multimodal User Interfaces* 9.4, pp. 323–331.
- Török, Ágoston, Orsolya Kolozsvári, et al. (2014). "Effect of stimulus intensity on response time distribution in multisensory integration". In: *Journal on Multimodal User Interfaces* 8.2, pp. 209–216.
- Török, Ágoston, T Peter Nguyen, et al. (2014). "Reference frames in virtual spatial navigation are viewpoint dependent". In: *Frontiers in human neuroscience* 8.

Conference Proceedings

- Török, Ágoston (2016). "From human-computer interaction to cognitive infocommunications: a cognitive science perspective". In: *Cognitive Infocommunications (CogInfoCom), 2016 7th IEEE Conference on*. IEEE, pp. 343–348.
- Persa, György et al. (2014). "Experimental framework for spatial cognition research in immersive virtual space". In: *Cognitive Infocommunications (CogInfoCom), 2014 5th IEEE Conference on*. IEEE, pp. 587–593.
- Török, Ágoston, István Sulykos, et al. (2014). "Comparison between wireless and wired EEG recordings in a virtual reality lab: Case report". In: *Cognitive Infocommunications (CogInfoCom), 2014 5th IEEE Conference on*. IEEE, pp. 599–603.

SCHOLARSHIPS & AWARDS

- 2017 - 1st place at the Telekom Leading Data Hackathon
- 2016 - Qusp prize at the IEEE Brain & Vision Hackathon
- 2016 - 28th place on the Senior Data Science competition
- 2013 - Junior researcher fellowship, Hungarian Academy of Sciences
- 2013 - Campus Hungary Scholarship
- 2011 - Scholarship by the Student Union of Benedictine Schools
- 2010 - Scholarship granted by the Republic

PROJECTS

Twisted Gravity: Assessing visuo-vestibular cues integration for the perception of gravity

EPS, UK

Jan '17 - ongoing London, UK

We study gravity perception using Oculus Rift and galvanic vestibular stimulation

The significance of spatial reference frames in cognitive visualization

ELTE Multidisciplinary Grant

Jul '16 - ongoing Budapest, HU

Using eyetracking and virtual reality to find new ways for cartographic visualization

Neurocogspace

KTIA-AIK-12-1-2013-0037

Jun '13 – May '15 Budapest, HU

Creating a new virtual research platform where researchers can work together

- Took part in the development of a custom xml interface for Virca
- Studied EEG recording during locomotion

The gender dimension in Conceptual Modeling

EU Fp7 - 262044

Sept '14 - Jan '15 Technion, Haifa, Israel

Researching gender dimensions in navigation

- Built a conceptual model in OPM for the neural background of navigation

VERTAX

EU Fp7 - 262044

Sept '14 – Dec '14 UCL, London, UK

Studied distance perception on the vertical axis in virtual reality

- Found the explanation for the vertical distance illusion

VENTRIVIR

EU Fp7 - 262044

May '14 – Sept '14 Aix-Marseille Univ., FR

Studied how in-car warning systems interact with attention

- Designed a virtual reality paradigm in Unity3D