ÁGOSTON TÖRÖK

researcher & data scientist

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EXPERIENCE

Research associate

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

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' 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 associate

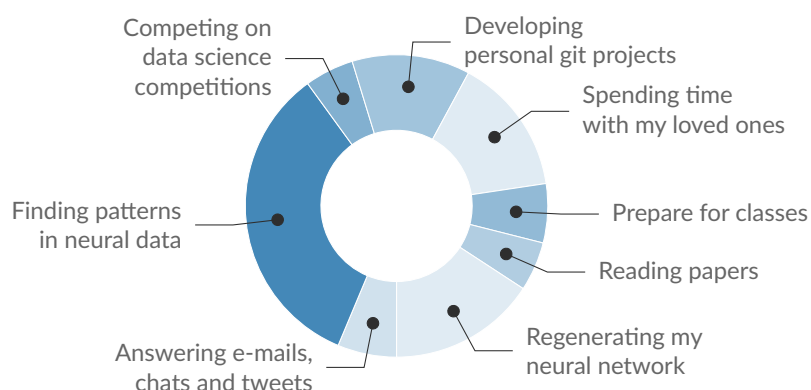**Brain Imaging Centre, RCNS, Hungarian Academy of Sciences**

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

- Competing on data science competitions
- Developing personal git projects
- Spending time with my loved ones
- Finding patterns in neural data
- Prepare for classes
- Reading papers
- Answering e-mails, chats and tweets
- Regenerating my neural network

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, 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`. URL: `http://dx.doi.org/10.1371%2Fjournal.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.
- Török, Ágoston, Andrea Kobor, et al. (2015). "Location of a visual object is processed in multiple frames of reference: An ERP study". In: *Perception*. Vol. 44. Sage Publications Ltd 1 Olivers Yard, 55 City Road, London Ec1y 1sp, England, pp. 313–313.
- 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.
- Török, Ágoston, Zsuzsanna Tóth, et al. (2013). "Integration of warning signals and signaled objects to a multimodal object: A pilot study". In: *Cognitive Infocommunications (CogInfoCom), 2013 IEEE 4th International Conference on*. IEEE, pp. 653–658.

SCHOLARSHIPS & AWARDS

- 2016 - Qusp prize at the IEEE Brain & Vision Hackathon
- 2016 - 28th place on the Senior Data Science competition
- 2015 - 2nd place at the Painter Prize at Cognitive Science Arena
- 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