Vilim Štih

Education

2015 ›› **PhD Neurosciences**
Max Planck Institute of Neurobiology, LMU München, Germany,
Supervisor: Dr. Ruben Portugues

2013 – 2015 **MSc Neurosciences**
Ludwig-Maximilians-Universität München, Germany,
Thesis supervisors: Dr. Álvaro Tejero Cantero, Prof. Dr. Andreas Herz

2010 – 2013 **BSc in Electrical Engineering and Information Technology**
University of Zagreb, Croatia

Projects

7. 2019 – 9. 2019 **Research internship at the Center for Brains, Minds and Machines, Massachusetts Institute of Technology, group of Tomaso Poggio, supervised by Dr. Xavier Boix**
- *developed synthetic datasets and training protocols for recurrent convolutional networks for image segmentation that improved learning of long-range dependencies*

2017 ›› **Stytra - a system for online animal tracking and behavior and the accompanying analysis package (bouter and Bouter.jl)**

2015 ›› **microscope control software and analysis pipelines (fimpy, VolumeRegistration.jl and Calcium.jl)**

8. 2014 – 9. 2014 **Research internship at Ludwig-Maximilians-University Munich, group of Professor Andreas Herz:**
single-cell modelling of electrophysiolology of stellate cells
- *collaborating with an experimental group, building a GUI and employing genetic algorithms for exploring the parameter space of different ion channel properties*

2. 2014 – 3. 2014 **Research internship, Technical University of Munich, group of Professor Jörg Conradt:**
neurally-inspired optic flow estimation from event-based datastreams
- *processing data from a neuromorphic sensor, designing and implementing algorithms in C++; real time data visulisation*

7. 2013 – 9. 2013 **Research internship at École polytechnique fédérale de Lausanne (EPFL), LTS4 group of Prof. Pascal Frossard**
- *implementation of published dictionary learning algorithms for sparse coding in MATLAB, testing on standard datasets*

Skills

python ● ● ● ● ●
scientific stack, QT, TensorFlow

julia ● ● ● ● ●
scientific stack, Flux

C++ ● ● ● ○ ○
robotics with ROS, QT

git, continuous integration
● ● ● ● ○

HTML, CSS, Javascript
● ● ● ○ ○

bash, Docker, SLURM
● ● ● ○ ○

Adobe Photoshop, Illustrator, InDesign ● ● ● ● ●

Blender, SketchUp ● ● ● ○ ○

Languages

English, German, Croatian
● ● ● ● ●

Italian, French ● ● ○ ○ ○

Publications

K. M. Villalobos[1], **Štih, V**[1], Ahmadinejad, A[1], Sundaram, S, Dozier, J, Francl, A, Azevedo, F, Sasaki, T, and Boix, X *Do Neural Networks for Segmentation Understand Insideness?*

<div align="right">[1]equal contribution</div>

KP Siju, **Štih V**, Aimon S, Gjorgjieva J, Portugues R, Kadow ICG. *Valence and state-dependent population coding in dopaminergic neurons in the fly mushroom body (2020)*

Dragomir EI, **Štih V**, Portugues R. *Evidence accumulation during a sensorimotor decision task revealed by whole-brain imaging* (2020)

Štih V[1], Petrucco L[1], Kist AM, Portugues R. *Stytra: an open-source, integrated system for stimulation, tracking and closed-loop behavioral experiments* (2018)

<div align="right">[1]equal contribution</div>

Knogler LD, Markov DA, Dragomir EI, **Štih V**, Portugues R. Sensorimotor representations in cerebellar granule cells in larval zebrafish are dense, spatially organized and non-temporally patterned. (2017)

Courses

8. 2018   Center for Brains, Minds and Machines (MIT/Harvard)
Brains Minds and Machines Summer Course at Marine Biological Laboratory, Woods Hole MA, USA

7. 2017   Redwood Center for Theoretical Neuroscience, UC Berkeley, USA
Berkeley summer course in mining and modeling of neuroscience data

Teaching

SS 2019. & 2020   TA for Large Scale Modelling and Large Scale Data Analysis course at the Technical University of Munich

2012, 2013   Undergraduate TA at the University of Zagreb on six subjects, spanning electronics, instrumentation and programming

Awards and achievements

2014/2015   scholarship of the German Academic Exchange Service (DAAD) in 2014/2015

2013   Josip Lončar award for excellence in studies (Faculty of Electrical Engineering and Computing, Zagreb, Croatia – 1st ranking by GPA out of ~250 students)

2008 – 2013   scholarship of the City of Zagreb

2009 and 2010   member of the Croatian representation at the International Physics Olympiad (IPhO) in Mexico and Croatia