INDIANA UNIVERSITY

FULFILLING *the* PROMISE

Time	Event
8:30 am - 9:00 am	Breakfast *room: 1016*
9:00 am - 9:15 am	Welcome & Introduction *room: 1016*
9:15 am - 10:00 am	Carlo Pierpaolo (NIH) Important Features of a Pipeline for Processing Diffusion Weighted Images *room: 1016*
10:00 am - 10:30 am	Hackathon Project Pitches *room: 1016*
10:30 am - 12:00 pm	Okan Irfanoglu (NIH) Tutorial *: Introduction to Tortoise Software *room: 4063* Hackathon * *room: 4105, 4004, 4101,, 4012*
12 pm - 1:30 pm	Lunch
1:30 pm - 2:15 pm	Carlo Pierpaoli (NIH) Applications of diffusion MRI driven Tensor Based Morphometry (DTBM) in the human brain *room: 1016*
2:15 pm - 3:00 pm	Divya Varadarajan (USC) EAP response function - new theory to characterize and optimize efficiency of diffusion MRI *room: 1016*
3:00 pm - 5:00 pm	Eleftherios Garyfallidis (IU) Tutorial *: Pythonic Data Analysis *room: 4063* Hackathon * *rooms: 4105, 4004, 4101, 4063, 4012*
5:00 pm - 6 pm	Assembly

Note: Hackathon & Tutorial run in parallel

Carlo Pierpaoli

Dr. Pierpaoli obtained an his M.D. from the University of Milan, Italy in 1989, the European Board Certification in Neurology in 1993, and a PhD. in Neuroscience in 1997. His research has been aimed at understanding the anatomical substrates of normal brain development and neurological disorders elucidating relationships between physiological function and brain structure, architecture and organization. Dr. Pierpaoli and his colleagues performed the first diffusion tensor imaging (DTI) studies of the human brain and received the NIH Award of Merit for this research. He has continued working in the field of diffusion MRI by proposing new metrics to describe the diffusion process, including anisotropy measures and the widely used directionally encoded color maps. Recently he and his group have been focusing on the effects of "physiological noise" in clinical MRI studies, proposing a number of approaches for increasing their accuracy and reproducibility.

Kesshi Jordan

Kesshi is a postdoctoral researcher in the Memory & Aging and Dyslexia Centers at the University of California, San Francisco studying Primary Progressive Aphasia and Dyslexia. She obtained her PhD from the UCSF/Berkeley Joint Program in Bioengineering, completing her dissertation "Diffusion MR Image Processing Tools for Reliable Fiber Tracking Analyses: Neurosurgery and Radiation Oncology Applications" in the summer of 2017.

Konstantinos Arfanakis

Konstantinos Arfanakis, PhD, is Professor of Biomedical Engineering at the Illinois Institute of Technology, and Leader of the Imaging and Bioengineering Studies at the Rush Alzheimer's Disease Center. Dr. Arfanakis has expertise in MRI pulse sequence development, image reconstruction, and image processing. His research focuses on multi-parametric MRI in aging and dementia, ex-vivo brain MRI, and brain atlas development

Divya Varadarajan

Divya Varadarajan is an Electrical Engineering Ph.D. student working under the supervision of Prof. Justin P. Haldar at the Biomedical Imaging Laboratory, University of Southern California. Her research focuses on developing signal processing theory and methods for Diffusion MRI. She received an M.S. in Electrical Engineering from the University of Southern California in 2013, and a B.E. in Telecommunication Engineering from the PES Institute of Technology, India in 2007.

Justin Gardner

Justin Gardner received his BS degree in Computer Science from Yale University in 1993, and PhD in Bioengineering from the University of California, Berkeley and UCSF in 2002. After post-doctoral work at the RIKEN Brain Science Institute and New York University, he returned to RIKEN in 2009 to become an independent investigator in the position of a Unit Leader. He was an adjunct associate professor at the University of Tokyo from 2011-2014. He moved to the Psychology Department at Stanford University in 2014 and is currently an assistant professor there. His primary research interests are in how prior information affects visual perception in humans and studies this by using computational models to link behavioral measures of perception to underlying cortical activity as measured with functional imaging.

Dogu Baran Aydogan

Dogu Baran Aydogan earned his Ph.D. degree in Biomedical Engineering at Tampere University of Technology, Tampere, Finland in 2014. He is currently a postdoctoral scholar at the Laboratory of Neuro Imaging (LONI), USC Mark and Mary Stevens Neuroimaging and Informatics Institute, conducting research on structural connectivity of the brain using diffusion MRI images. His research focuses on the development of novel tractography techniques. He was a winner of the Young Scientist Award in MICCAI 2016. He has also earned multiple awards in international tractography competitions including the ISMRM 2017 Traced and ISBI 2018 Votem challenges

Okan Irfanoglu

M. Okan Irfanoglu received his M.S and Ph.D. degrees in Computer Sciences departments of Bogazici University Turkey, and the Ohio State University USA. He subsequently joined the STBB lab in the National Institutes of Health (NIH) and currently hold the role of staff scientist in the Quantitative Medical Imaging Section, in NIBIB/ NIH. Dr. Irfanoglu's research focus is mostly on diffusion MRI, specifically the application of image registration, image processing and machine learning strategies to improve the quality and reproducibility of diffusion MRI data. Dr. Irfanoglu developed several methods to improve the reliability of diffusion MRI data, ranging from distortion correction to reliable diffusion MRI atlas creation. The methods he developed are publicly available under the TORTOISE software

Yaroslav Hachenko

To advance our understanding of the brain function Yaroslav have participated in the projects on multimodal (e.g. EEG/fMRI) data analysis [HHP05], human face perception [HH08 ,GGH+13], large-scale decoding of the mental states [PHH09], causal structure inference [RHH+10] and alignment of functional imaging data [CGG+12]. To streamline his own analysis and to help other researchers with answering former questions, Yaroslav have joined the efforts with Dr. Michael Hanke to develop PyMVPA [HHS+09a] -- a flexible and versatile Python platform for the analysis of neural data through employing recent advances in statistical learning methods. It is really inspiring to see the PyMVPA being used productively by hundreds of researchers around the globe.

Time	Event
8:30 am - 9:00 am	Breakfast *room: 1016*
9:00 am - 9:15 am	Day Overview *room: 1016*
9:15 am - 10:00 am	Kesshi Jordan (UCSF) Disconnection Pipeline for high-troughput pathway lesion symptom mapping *room: 1016*
10:00 am - 10:30 am	Hackaton Project Pitches *room: 1016*
10:30 am - 12:00 pm	Eleftherios Garyfallidis (IU) Tutorial *: Introduction to Diffusion Imaging in Python (DIPY) *room: 4063* Hackathon * *room: 4105, 4004, 4101,, 4012*
12 pm - 1:30 pm	Lunch
1:30 pm - 2:00 pm	Amatria Presentation *4th floor*
2:00 pm - 2:45 pm	Dogu Baran Aydogan (USC) *room: 1016*
2:45 pm - 5:00 pm	Eleftherios Garyfallidis Tutorial *: Advanced to Diffusion Imaging in Python *room: 4063* Hackathon *: *room: 4105, 4004, 4101, 4063, 4012*
5:00 pm - 6 pm	Assembly

Note: Hackathon & Tutorial run in parallel

8:30 am - 9:00 am	Breakfast	
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9:00 am - 9:15 am	Day Overview	
	room: 1016	
9:15 am - 10:00 am	Justin Gardner (USC)	
	Reverse-hacking the brain: Inferring neural coding properties from population measurements	
	room: 1016	
10:00 am - 10:30 am	Hackathon Project Pitches	
	room: 1016	
10:30 am - 12:00 pm	Franco Pestilli (IU)	
	Tutorial *: Introduction to Brain-Life	
	room: 4063	
	Hackathon *	
	room: 4105, 4004, 4101,, 4012	
12 pm - 1:30 pm	Lunch	
1:30 pm - 2:15 pm	Konstantinos Arfanakis (IIT)	
	room: 1016	
2:15 pm - 3:00 pm	Yaroslav Halchenko (DC)	
	Open by Design - Software and platforms from the Center for Open Neuroscience	
	room: 1016	
3:00 pm - 5:00 pm	Franco Pestilli (IU)	
	Tutorial *: Make Your own Brain-Life App	
	room: 4063	
	Hackathon *	
	room: 4105, 4004, 4101, 4063, 4012	
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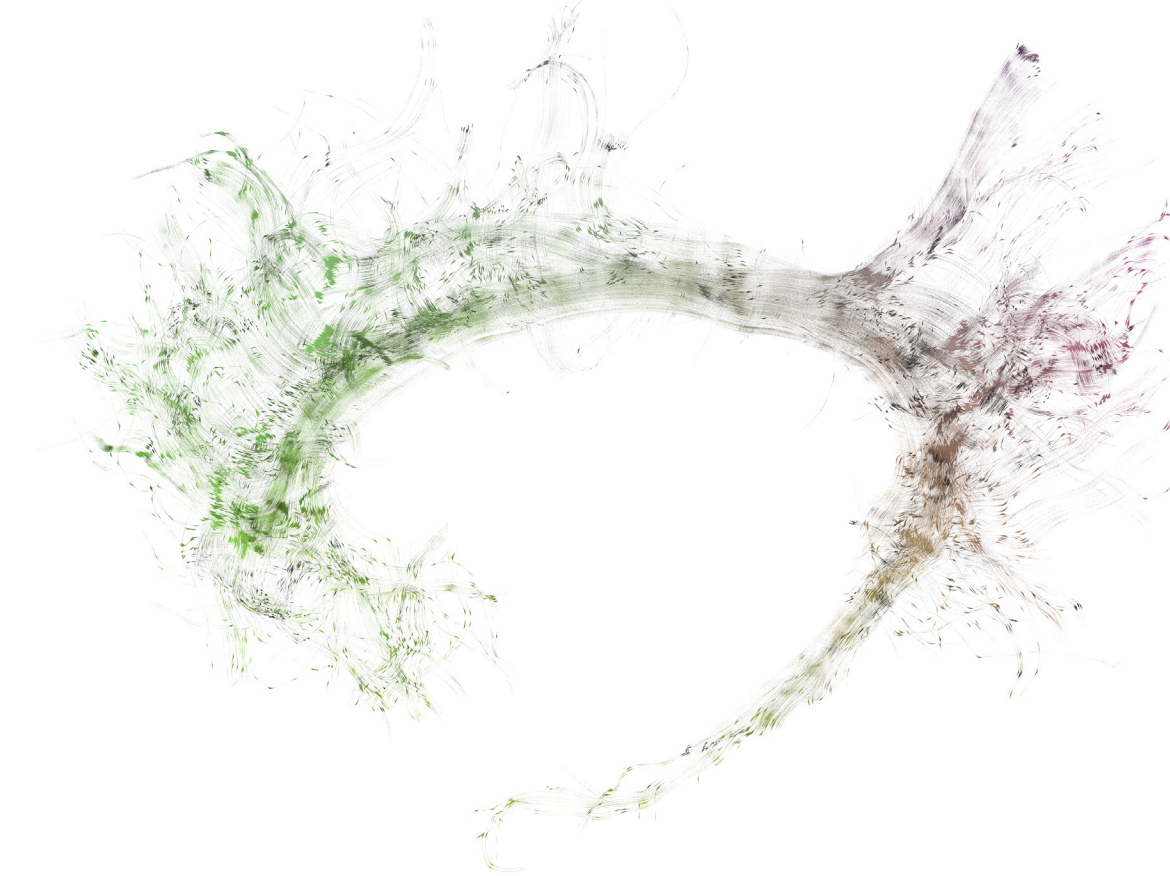
ORGANIZERS

Eleftherios
Garyfallidis

Valentin
Pentchev

Franco
Pestilli

For questions or concerns please contact us at
grg-l@list.indiana.edu.

For more information concerning this event go to
https://brainhack.sice.indiana.edu

BrainHack Global

May 2-4, 2018
Indiana University
Bloomington, IN, USA

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