

BCCN Berlin

Examples of Past Lab Rotations Topics

Year	Supervisor	Topic
2020	Obermayer	Population Based Training of Deep-Q Networks for Multiagent Reinforcement Learning in Hanabi
2020	Filevich	Reaction times as a proxy for confidence about a response
2020	Blankenburg	Innate electrophysiological mediators of visual hallucination intensity in flicker light stimulation
2020	Sterzer	Modeling the interaction between the feedback and meta-cognition in perceptual decision making
2020	Sprekeler	Network Analysis of Chaining Behavior in Drosophila Melanogaster
2020	Ritter	Classifying and predicting alcohol and tobacco use using machine learning on structural magnetic resonance imaging data
2020	Sprekeler	Replicating Deep Reinforcement Learning with Relational Inductive Biases
2020	Haufe	Interpretability of linear models in machine learning
2020	Franke/ Hierlemann	Analysis of ex vivo retinal data recorded with High-Density Microelectrode Arrays
2020	Larkum	Deep X in behavioural induced gene expressions
2019	Müller	A convolutional neural network for a generalized motor imagery brain computer interface
2019	Obermayer	Using Saliency Maps to Enhance Recurrent Neural Networks
2019	Richardson/ Blankertz	Realization of intraoperative neurophysiological experiments in human subjects using real time analysis of computational models
2019	Schreiber	The impact of oxygen and temperature on the electrocytes of <i>Eigenmannia virescens</i>
2019	Kremkow	Characterizing visual response properties in the mouse superior colliculi
2019	Vogels, Obermayer	Surrogate Gradient Learning in Spiking Neural Networks
2019	Ritter	Analyzing heatmaps in Alzheimer's disease
2019	Blankertz	Evaluation of common stationary spatio-spectral patterns (CSSSP) filters for classification in brain-computer interfacing
2019	Brecht	Ultrasonic analyses and morphological software solutions
2019	Blankertz	The Electrocerebral Signature of Cardiac Death
2019	Rolfs	Perception of causality
2019	Ritter	Visualizing CNN models on sex classification & age regression based on structural MRI data
2019	Ritter	Autoencoders for normative modeling in neurological diseases
2019	Ritter	Graph based CNNs for analyzing resting state fMRI data

2019	Kempster	Modeling ripple oscillations in networks of inhibitory pulse-coupled phase oscillators with delay
2019	Blankertz	Evaluation of common stationary spatio-spectral pattern filters for classification in brain-computer interfacing
2019	Soekadar	Hemisphere specific excitation of the motor cortex via temporal interference TES
2019	Schöll	Hierarchical clusters in networks with spike-timing dependent plasticity
2019	Brecht	Behavioral and neural correlates of hide and seek in rats
2019	Schreiber	Simulating the influence of extracellular potassium on homoclinic bifurcations in a network of neurons
2019	Soekadar	Finding theoretically optimal electrode positionings for T1 stimulation of V1 (via head modeling)
2019	Obermayer	N-gram based temporal approach for local stimulus-action pattern analysis of a probabilistic temporal sequence learning task
2019	Ritter	LSTM for fMRI data to detect mental illness
2019	Haslacher	Evaluating effective connectivity with DCM in binocular rivalry
2019	Lindner	Generation of non-poissonian spike trains
2019	Neumann/ Haynes	Finding beta activity across different modalities (iEEG, fMRI)
2019	Haynes	Excitatory & Inhibitory neural microcircuit dynamics in macaque dorsal premotor cortex during perceptual decisions
2019	Gütig	Learning dynamics of stochastic gradient descent, feedback alignment and broadcast alignment in the teacher-student paradigm
2019	Curio	Spatial resolution of evoked somatosensory high-frequency oscillations in EEG
2019	Obermayer	Modelles for Automated Validation and Comparison of Biomarkers in Psychotic Diseases
2019	Gütig	Self-supervised Learning in Spiking Neural Networks
2019	Ritter	Kinematic Control
2019	Sprekeler	Analysis of neural data simultaneously recorded from LGN and superior colliculus in mice
2019	Soekadar	Development of an EEG headset for controlling a hand exoskeleton
2019	Haynes	Prediction of motor behavior from invasive neurophysiology
2019	Ritter	DCGAN for vessel segmentation
2019	Brecht	Analysis of in vivo synaptic events in lateral septal neurons of the rat
2019	K Ritter	Developing a machine learning framework for sMRI
2019	Obermayer	Meta Reinforcement Learning
2019	Obermayer	Counting people on image sequences using convolutional LSTM networks
2019	Judkewitz/Poulet	Correlating large-scale neuronal activity to single cell membrane potential fluctuation in vivo
2019	Owald	Non-invasive 2-photon and 3-photon imaging in Drosophila melanogaster
2019	Schmitz	Patch-clamping CA3 and dentate 99vus cell for tuning a dynamic clamp amplifier

2019	Klauschen, Müller	Active Learning by leveraging deep image representations
2019	Gramann	Population activity of Grid cells in Human EEG data
2018	Blankertz	Detection of Respiratory States from EEG Signals – Brain Ventilator Interface
2018	Schwalger	Hazard rate approach to neural population dynamics with external noise
2018	Blankertz	Electrical temporal interference stimulation in a phantom
2018	Schoell	Relay synchronization of chimera states in multiplex neuronal networks
2018	Blankertz	Neural Correlates and Subliminal Priming – an EEG Study
2018	Kempter	Emergence of spontaneous sharp-wave-like events in a spiking model with 3 neuronal populations
2018	Haynes	Towards a generalized implementation of the Same Analysis Approach framework
2018	Lewin	Vocal communication in eusocial mammal
2018	Sodekar	Symbolic Transfer Entropy in a Frequency Tagging Experiment
2018	Haynes	Cognitive Ontology
2018	Blankertz	Building a BCI classifier for motor and speech imagination
2018	Schmidt	Characterization of neuronal activity packets in retrosplinal cortex and correlations with hippocampal activity
2018	Hafner	Motor Babbling of 6 Degree of Freedom Robotic Arm with Inverse