



# MEi:CogSci Projects for Specialisation

Effective September 2020

## Projects at the Comenius University in Bratislava

<i>Project</i>	<i>Description</i>	<i>COVID-19 circumstances (comments)</i>	<i>Qualifications</i>	<i>Places</i>	<i>Level</i>
<b>Grounding abstractness</b>  <a href="#">Igor Farkas, prof.</a> Dept. of Applied Informatics, Faculty of Math, Physics and Informatics, CUB <a href="#">web</a>	Abstract concepts lie at the core of human cognition, providing it with an immense potential for thinking. Yet, understanding abstractness remains an open challenge in cognitive science, despite an outburst of recent papers published on the topic. The goal of the project is to survey the field and propose a representational framework for concrete and abstract concepts that would lend itself to connectionist implementation, and could be simulated in a smaller domain of words.		This project is a good opportunity for joint work. One student should have a background in psychology, or linguistics, and the other one experience with machine learning and/or programming.	2	S-I
<b>Connectionist modeling in cognitive robotics</b>  <a href="#">Igor Farkas, prof.</a> Dept. of Applied Informatics, Faculty of Math, Physics and Informatics, CUB <a href="#">web</a>	The goal will be to implement, simulate and analyse a small neural network model of a chosen agent component. Details will be specified individually.		Systematic work, programming skills. Knowledge of artificial neural networks and reinforcement learning is an advantage.	1-2	S-I

<i>Project</i>	<i>Description</i>	<i>COVID-19 circumstances (comments)</i>	<i>Qualifications</i>	<i>Places</i>	<i>Level</i>
<b>Automated data analysis for qualitative research</b> <a href="#">Martin Takac, assoc. prof.</a> Dept of Applied Informatics, Faculty of Math, Physics and Informatics, CUB  <a href="#">web</a>	Amount of textual data in qualitative research in social analysis would benefit from automated analysis. However, coding and analyzing free text is hard, and the tools are usually developed by machine learning people without much domain knowledge. Bridging the insight from social scientists with the expertise of ML people in a dialog could lead to much better tools and also mutual understanding. The goal of this project is to map the domain, identify key concepts, design a suitable representation formalism and in an ideal case also implement a software tool for qualitative research.		One of the students should have reasonable programming skills. Some knowledge of machine learning and natural language processing welcome, but not mandatory. The other student should ideally have background in social sciences with some knowledge of qualitative methods (again, welcome, but not mandatory).	2	S-I
<b>Cognitive and brain mechanisms of controlled semantic cognition</b> <a href="#">Martin Marko, PhD</a> Dept of Applied Informatics, FMPI / Dept of Behavioral Neuroscience, INPP  <a href="#">web</a>	Project focuses on the mechanisms and correlates of domain-general and domain-specific control of semantic processing. This assignment involves experimental manipulation and cognitive assessment of semantic measures in healthy participants. Optionally, the project may include non-invasive transcranial electrical brain stimulation (tES).		Experience in experimental research and quantitative methodology is an advantage.	1-2	S-I
<b>Brain simulation, sensory gating and cognitive inhibition</b> <a href="#">Igor Riecansky, PhD</a> Institute of Normal and Pathological Physiology, Slovak Academy of Sciences, Bratislava <a href="#">web</a>	Cognitive inhibition is essential for goal-directed behavior. This project will investigate the possibilities of modulating brain inhibitory processes using non-invasive transcranial direct current brain stimulation. An experimental approach will be adopted using behavioral and electrophysiological methods (EEG, EMG).		Experience in experimental research and quantitative methodology is an advantage.	1	S-I

<i>Project</i>	<i>Description</i>	<i>COVID-19 circumstances (comments)</i>	<i>Qualifications</i>	<i>Places</i>	<i>Level</i>
<p><b>Role of emotions in accepting epistemically suspect beliefs</b></p> <p><a href="#">Vladimira Cavojova, PhD</a></p> <p>Institute of Experimental Psychology, Slovak Academy of Sciences</p> <p><a href="#">web</a></p>	<p>The aim of the project is to identify the role of emotionality in accepting epistemically suspect beliefs ESB, particularly to what extent do fear and anxiety motivate the rise, acceptance and dissemination of these beliefs, what is the relation to individual variables such as anxiousness, what is the effect of situational variables or individual experience – e.g., traumatizing experience (Bonanno &amp; Jost, 2006), or experienced insecurity, lack of control, and such (Chapman University, 2016).</p>		Background in psychology is an advantage	1	S-I
<p><b>Theories of Mindreading</b></p> <p><a href="#">Juraj Banovsky, PhD</a></p> <p>Dept of Applied Informatics, Faculty of Math, Physics and Informatics, CUB</p> <p><a href="#">web</a></p>	<p>Examination of current theoretical approaches in the research of theory of mind. Review and critical appraisal of relevant studies on social cognition from the perspective of “4E” theories of cognition as well from the perspective of “classical” approaches (simulation, theory-theory).</p>		-	1	S-I
<p><b>Agenticity and intentionality in forming epistemically suspect beliefs</b></p> <p><a href="#">Vladimira Cavojova, PhD</a></p> <p>Institute of Experimental Psychology, Slovak Academy of Sciences</p> <p><a href="#">web</a></p>	<p>The aim of the project is to replicate the research by Douglas et al. (2014) who found out that agenticity and intentionality plays role in acquiring conspiracy beliefs and extend it to other relevant epistemically suspect beliefs.</p>		Background in psychology is an advantage	1	S-I

<i>Project</i>	<i>Description</i>	<i>COVID-19 circumstances (comments)</i>	<i>Qualifications</i>	<i>Places</i>	<i>Level</i>
<p><b>Barriers of people's climate change beliefs and pro-environmental behaviors</b></p> <p><a href="#">Jakub Šrol, PhD.</a></p> <p>Institute of Experimental Psychology, Slovak Academy of Sciences</p>	<p>Despite the fact that people around the world voice their concern over negative consequences of climate change, their actual engagement in pro-environmental behavior is rather low. Researchers uncovered many barriers that people report as reasons for not engaging more with environmental issues, spanning from the lack of understanding of climate change, resulting from cognitive biases that increase psychological distance from the issue, or barriers driven by feelings of helplessness and guilt. The aim of the project is to gain further insight into barriers of people's climate change beliefs and pro-environmental behaviors, and to find ways to improve people's engagement with this issue.</p>		Background in psychology is an advantage	1-2	S-I
<p><b>Nature of human consciousness</b></p> <p><a href="#">Silvia Galikova, prof.</a></p> <p>Institute of Philosophy, Slovak Academy of Sciences</p> <p><a href="#">web</a></p>	<p>Main objective of the project is to reconsider novel experimental and theoretical models, theories on the status and function of conscious experience.</p>		Background in the philosophy of mind is an advantage	1	S-I
<p><b>Role of emotions in accepting epistemically suspect beliefs</b></p> <p><a href="#">Vladimira Cavojova, PhD</a></p> <p>Institute of Experimental Psychology, Slovak Academy of Sciences</p> <p><a href="#">web</a></p>	<p>The aim of the project is to identify the role of emotionality in accepting epistemically suspect beliefs ESB, particularly to what extent do fear and anxiety motivate the rise, acceptance and dissemination of these beliefs, what is the relation to individual variables such as anxiousness, what is the effect of situational variables or individual experience – e.g., traumatizing experience (Bonanno &amp; Jost, 2006), or experienced insecurity, lack of control, and such (Chapman University, 2016).</p>		Background in the JDM is an advantage	1	S-I

<i>Project</i>	<i>Description</i>	<i>COVID-19 circumstances (comments)</i>	<i>Qualifications</i>	<i>Places</i>	<i>Level</i>
<b>Investigation of the role of spontaneous activity in heterosynaptic plasticity</b> <a href="#">Lubica Benuskova, prof.</a> Dept. of Applied Informatics, Faculty of Math, Physics and Informatics, CUB <a href="#">web</a>	Long-term potentiation (LTP) and long-term depression (LTD) of synaptic efficacy is considered to be the synaptic mechanism of long-term memory. The ability of high-frequency stimulation (HFS) to induce LTP of all major excitatory synaptic pathways in hippocampus is well-characterized. At the same time, neighbouring pathways exhibit heterosynaptic LTD. The goal of the project is to investigate the hypothesis that spontaneous activity of neurons is necessary for heterosynaptic LTD. This can be done either by computational model or by writing a review of experimental research articles that deal with this problem.		In case of computational investigation, programming in C++ required	1	S-I
<b>Studying the effects of motor training on cognition using mixed reality</b> <a href="#">Roman Rosipal, PhD</a> Institute of Measurement Science, Slovak Academy of Sciences, Bratislava <a href="#">web</a>	The objective is to study usefulness and applicability of the motor training using mixed reality focused on the rehabilitation of patients after stroke. The project will involve pilot testing of an experimental protocol with a patient.		Systematic work, programming in Matlab or Python is an advantage	1-2	S-I
<b>Development of beliefs by artificially modulated states of mind</b> <a href="#">Tomas Gal, PhD</a> IT Department, VM Mlyny, CUB <a href="#">web</a>	Research into altered states of mind, done by various methods, like dance, meditation or stress.		Background in psychology is an advantage	1	S-I

<i>Project</i>	<i>Description</i>	<i>COVID-19 circumstances (comments)</i>	<i>Qualifications</i>	<i>Places</i>	<i>Level</i>
<b>AI biases</b>  <a href="#">Tomas Gal, PhD</a> IT Department, VM Mlyny, CUB  <a href="#">web</a>	Analysis of AI facial and voice recognition systems shows vulnerabilities to biases and errors introduced by both, its human designers and the data used to train the AI systems. We may extrapolate, that similar vulnerabilities are in play also in other types of problem-solving scenarios, including medical and financial assisting AI. This research projects focus on two major question (1) whether the AI should be stripped from all human-like biases and (2) if not, what kind of moral compass should be implemented. Practical output of this research will be a conceptual model of economically profitable ethical AI.		Background in psychology or philosophy is an advantage.	1-2	S-I
<b>Human being and information technology</b>  <a href="#">Emil Visnovsky, prof.</a> Faculty of Philosophy, Comenius University  <a href="#">web</a>	Project will focus on the analysis and functions of information technology and its varieties in human life from a philosophical point of view based on contemporary cognitive science and AI.			1-2	S-I

# Projects at the Eötvös Loránd University

Project	Description	COVID-19 circumstances (comments)	Qualifications	Places	Level
<p><b>Neurocognitive mechanisms of speech perception, reading, music</b></p> <p><a href="#">Ferenc Honbolygó</a></p> <p>ELTE, Department of Cognitive Psychology &amp; Research Group of Neurocognitive Development, Hungarian Academy Sciences</p>	<p>Investigating the neurocognitive mechanisms of speech perception, reading, music, implicit learning and cognitive control in adults, children and infants, with a special focus on clinical and developmental aspects, using the latest techniques of brain imaging (EEG, fMRI).</p>		<p>Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).</p>	1-2	S-I MA
<p><b>The role of oscillations in perceptual processes using EEG, Spatial cognition, Time perception</b></p> <p><a href="#">Zoltán Nádasdy</a></p> <p>ELTE, Department of Cognitive Psychology</p>	<ul style="list-style-type: none"> <li>Studying the role of oscillations in perceptual processes using EEG</li> <li>Visual consciousness</li> <li>Development of spatial cognition and its relationship to the theory of mind</li> <li>Time perception and cognitive representation of time</li> </ul>		<p>Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).</p>	1-2	S-I MA
<p><b>Comparative analysis of social cognition in dogs and humans: Family dog project</b></p> <p><a href="#">Adam Miklosi</a></p> <p>ELTE, Department of Ethology</p> <p><a href="#">web</a></p>	<ul style="list-style-type: none"> <li>Comparative analysis of social cognition in dogs and humans: Interdisciplinary approach</li> <li>Studying cognitive aging in dogs (researcher: Eniko Kubinyi)</li> <li>Interspecific attachment in cats to humans (researcher: Marta Gácsi)</li> <li>Bioacoustic analysis of vocal communicative signals in dogs (researcher: Tamás Faragó)</li> </ul>		<p>Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).</p>	2-4	S-I MA

<b>Neglect syndrome in dogs</b>	Description of the neglect syndrome in dogs (using the side preference phenomenon known from cognitive tests as a starting point).	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Anna Kiss</a> MTA TTK, Hungarian Academy Sciences <a href="#">web</a>				
<b>Social learning and social cognition in infants</b>	Behavioral and eye-tracking studies in the field of Cognitive development	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Ildiko Kiraly</a> ELTE, Department of Cognitive Psychology web				
<b>Cross-cultural research on The Evolution of Laws</b>	We recently found that the justice intuitions American and Indian MTurk participants have with respect to a given offense (e.g., theft, fraud, sexual offense, manslaughter, etc.) positively correlate with the actual legal punishments provided for that offense by actual laws sampled from actual criminal codes.	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Ildiko Kiraly</a> ELTE, Department of Cognitive Psychology web	This project seeks to replicate and extend our recent findings, but now with participants from a large sample of very diverse national cultures.			
<b>Infant directed speech in dogs</b>	<ul style="list-style-type: none"> <li>• Studies include dog human communication</li> <li>• mutual reactions to emotional behaviour</li> <li>• cognitive aging in dogs, etc.</li> </ul>	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Anna Gergely</a> ELTE, Department of Ethology <a href="#">web</a>				

<b>Expert knowledge &amp; Event scripts</b>	<ul style="list-style-type: none"> <li>• Expert knowledge: measuring specific cognitive abilities of experts from different domains</li> <li>• Event scripts: encoding and retrieval of visual events; how does existing knowledge influence these processes</li> </ul>	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Anett Rago</a> ELTE, Department of Cognitive Psychology				
<b>Numerical cognition</b>	<ul style="list-style-type: none"> <li>• Elementary bases of number understanding</li> <li>• Development of number understanding</li> <li>• Methodological details of reaction time analysis</li> </ul>	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Attila Krajcsi</a> ELTE, Department of Cognitive Psychology <a href="#">web</a>				
<b>Recommended data analysis and statistical analysis</b>	<ul style="list-style-type: none"> <li>• Suggesting analysis paths for automatic data analysis software</li> <li>• Forming more informative data analysis output</li> <li>• Python coding of automatic data analysis software (www.cogstat.org)</li> </ul>	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Attila Krajcsi</a> ELTE, Department of Cognitive Psychology <a href="#">web</a>				
<b>Decision making</b>	One major focus of their research is to explore the mechanisms, biases of human decision making as well as their mitigation.	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Balázs Aczél</a> ELTE, Department of Affective Psychology				
<b>Executive functions in healthy, functioning &amp; specific conditions</b>	Elucidating the mechanism of executive functions (predominantly attention & inhibitory control).	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
<a href="#">Alexander Logemann</a> ELTE, Department of Affective Psychology				

<b>Sleep &amp; Cognition</b> <a href="#">Peter Simor</a>	Studies investigate the mechanisms and processes of sleep and dreaming in healthy and pathological conditions.	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
ELTE, Department of Affective Psychology <a href="#">web</a>				
<b>Cognitive abilities Lab</b> <a href="#">Kristof Kovacs</a>	Individual differences in cognitive abilities.	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
ELTE, Department of School Psychology				
<b>Cognitive vs. emotional flexibility</b> <a href="#">Renáta Cserjési</a>	<ul style="list-style-type: none"> <li>• Measuring and comparing emotional flexibility with cognitive flexibility in healthy and sub – and clinical populations</li> <li>• Eating problems</li> <li>• Improving emotional flexibility</li> </ul>	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
ELTE, Department of Affective Psychology				
<b>Human Interactions</b> <a href="#">Katalin Varga</a>	Behavioural, emotional, phenomenological and psycho-physiological changes in participants of interpersonal situations.	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
ELTE, Department of Affective Psychology				
<b>Human Adaptation</b> <a href="#">Anna Veress-Szekely</a>	Study resilience using an interdisciplinary research approach, implementing multiple levels of analysis perspectives based on genetic, developmental, physiological, demographic, cultural, economic and social variables.	Please, contact the project leader about the details (e.g. available places for students may be more than 2 for certain projects, available master thesis opportunities are also depend on the project).	1-2	S-I MA
ELTE, Department of Affective Psychology				

# Projects at the University of Ljubljana

Project	Description	COVID-19 circumstances (comments)	Required Qualifications	Places   Level
<p><b>Cognitive neuroscience of working memory and cognitive control</b></p> <p>Anka Slana Ozimič, PhD Department of Psychology, Mind and Brain Lab email: <a href="mailto:anka.slana@psy.ff.uni-lj.si">anka.slana@psy.ff.uni-lj.si</a> web: <a href="http://psy.ff.uni-lj.si/mblab/en">http://psy.ff.uni-lj.si/mblab/en</a></p>	<p>Multimodal study of working memory and cognitive control employing EEG, fMRI, eye-tracking, behavioral studies.</p> <p>Possible topics: Visual and spatial working memory; Cognition-emotion interaction; Working memory and cognitive control.</p> <p>See Mind and Brain Lab pages for other research opportunities: <a href="http://psy.ff.uni-lj.si/mblab/en/research">http://psy.ff.uni-lj.si/mblab/en/research</a>.</p> <p>Supervisor: prof. Grega Repovš</p>	Remote collaboration is also possible.	<p>Solid foundations in experimental design and statistics are required. Prior experience with EEG, fMRI or eye-tracker is beneficial as well as python, Matlab and R programming skills.</p> <p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis.</p>	Places: 1-2   Level: S-I & MA
<p><b>Brain connectivity studies</b></p> <p>Anka Slana Ozimič, PhD Department of Psychology, Mind and Brain Lab email: <a href="mailto:anka.slana@psy.ff.uni-lj.si">anka.slana@psy.ff.uni-lj.si</a> web: <a href="http://psy.ff.uni-lj.si/mblab/en">http://psy.ff.uni-lj.si/mblab/en</a></p>	<p>The project involves data collection, development of tools for fMRI and EEG functional connectivity analyses and their application to existing and novel datasets.</p> <p>Supervisor: prof. Grega Repovš</p>	Remote collaboration is also possible.	<p>Intermediate to advance programming, analytical and statistical skills are required. Familiarity with Matlab, python and possibly Julia is desired.</p> <p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis.</p>	Places: 1-2   Level: S-I & MA

<p><b>Studying Cognition with TMS (TMS Lab)</b></p> <p>Jure Bon, assist. prof.</p> <p>University Medical Centre Ljubljana, Department of Neurology, Laboratory for Cognitive Neuroscience &amp; University Psychiatric Clinic Ljubljana</p> <p>email: <a href="mailto:jure.bon@gmail.com">jure.bon@gmail.com</a></p> <p>web: <a href="http://kobz.si/en/LCN.php">http://kobz.si/en/LCN.php</a></p>	<p>Specific topics/projects are dependent upon ongoing projects in the lab during the exchange semester.</p> <p>Some phenomena researched so far: Effects of Intention on Inhibition in Focal Dystonia: A combined TMS- EEG study; Comparison of the efficacy of different TMS protocols on primary motor cortex.</p> <p>Possible supervisors: assist. prof. Jure Bon, prof. Zvezdan Pirtošek and others.</p>	<p><u>The project is not available for winter semester 2020/2021.</u></p>	<p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis.</p>	<p>Places: 1-2   Level: S-I &amp; MA</p> <p><u>The project is not available for winter semester 2020/2021.</u></p>
<p><b>Studying cognition with EEG (EEG Lab)</b></p> <p>Zvezdan Pritošek, prof.</p> <p>University Medical Centre Ljubljana, Department of Neurology, Laboratory for Cognitive Neuroscience</p> <p>email: <a href="mailto:zvezdan.pirtosek@kclj.si">zvezdan.pirtosek@kclj.si</a></p> <p>web: <a href="http://kobz.si/en/LCN.php">http://kobz.si/en/LCN.php</a></p>	<p>Specific topics/projects are dependent upon ongoing projects in the lab during the exchange semester.</p>	<p>Physical presence is needed.</p>	<p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis.</p>	<p>Places: 1-2   Level: S-I &amp; MA</p>

<p><b>Neurological and neuropsychiatric disorders</b></p> <p>Zvezdan Pritošek, prof.</p> <p>University Medical Centre Ljubljana, Department of Neurology, Laboratory for Cognitive Neuroscience</p> <p>email: <a href="mailto:zvezdan.pirtosek@kclj.si">zvezdan.pirtosek@kclj.si</a></p> <p>web: <a href="http://kobz.si/en/LCN.php">http://kobz.si/en/LCN.php</a></p>	<p>Possible topics: Dementia, Parkinson's disease, Tourette's Syn- drome, Depression, Schizophrenia.</p> <p>Specific topics/projects are dependent upon ongoing projects in the lab during the exchange semester.</p> <p>Possible supervisors: prof. Zvezdan Pirtošek, assoc. prof. Blaž Koritnik, assist. prof. Jure Bon and others.</p>	<p>Contact project supervisor or dr. Anka Slana Ozimič (<a href="mailto:anka.slana@psy.ff.un-lj.si">anka.slana@psy.ff.un-lj.si</a>).</p>	<p>Contact the responsible (contact person) and state your interests. If interested in carrying out your own research project propose a detailed research plan. Also state if interested in extending the research project into master's thesis.</p>	<p>Places: 1-2   Level: S-I &amp; MA</p>
<p><b>Predictors of deep brain stimulation in movement disorders patients</b></p> <p>Dejan Georgiev, assist. prof.</p> <p>University Medical Centre Ljubljana, Department of Neurology, Laboratory for Clinical Neuroscience</p> <p>email: <a href="mailto:dejan.georgiev@kclj.si">dejan.georgiev@kclj.si</a></p>	<p>We are collecting data for a study in which we are trying to determine electrophysiological (TMS and EEG) and imaging biomarkers of good outcome of DBS in patients with movement disorders.</p>	<p>Not suitable for distance research.</p>	<p>TMS, EEG, fMRI skills recommended.</p>	<p>Places: 2   Level: S-I</p>
<p><b>Bradykinesia/ Tachykinesia</b></p> <p>Dejan Georgiev, assist. prof.</p> <p>University Medical Centre Ljubljana, Department of Neurology, Laboratory for Clinical Neuroscience</p> <p>email: <a href="mailto:dejan.georgiev@kclj.si">dejan.georgiev@kclj.si</a></p>	<p>The mechanisms of bradykinesia in PD are not known. We will try to determine the mechanisms of bradykinesia in PD patients through physiological experiments and comparison with healthy controls.</p>	<p>Also possible in distance learning format (opportunities for literature review and distance research).</p>	<p>Technical skills recommended.</p>	<p>Places: 1   Level: S-I</p>

<p><b>Effect of neurotransmitters in gait and posture in Parkinson's disease</b></p> <p>Dejan Georgiev, assist. prof.</p> <p>University Medical Centre Ljubljana, Department of Neurology, Laboratory for Clinical Neuroscience</p> <p>email: <a href="mailto:dejan.georgiev@kclj.si">dejan.georgiev@kclj.si</a></p>	<p>Besides dopamine, other neurotransmitters (serotonin, noradrenaline, and acetylcholine) are also involved in posture and gait control in PD patients. As for a start, analysis of already collected data will be carried out.</p>	<p>Also possible in distance learning format.</p>	<p>Statistical skills recommended.</p>	<p>Places: 1   Level: S-I</p>
<p><b>Exploring eye movement alterations and its diagnostic value in patients with Alzheimer Disease</b></p> <p>Katarina Marjanovič, PhD</p> <p>University Medical Centre Ljubljana, Department of Neurology</p> <p>email: <a href="mailto:katarina.marjanovic@kclj.si">katarina.marjanovic@kclj.si</a></p>	<p>Project introduces different eye tracking paradigms in order to explore the eye movement abnormalities in patients with Alzheimer Disease, with the goal of evaluating their potential for an early diagnosis of cognitive decline. The emphasis is on introduction of paradigms that are as close as possible to normal, everyday-like experience (e.g., natural text reading, picture viewing).</p> <p>Supervisor: prof. Zvezdan Pirtošek</p>	<p>Physical presence is needed.</p>	<p>Experience with experimental design and statistical analysis. Prior experience with eye-tracker is beneficial, as well as intermediate to advance programming. Familiarity with R, Python; possibly also OpenSesame and/or Experiment Builder.</p> <p>State your interest via email (contact person).</p>	<p>Places: 1-2   Level: S-I</p>

<p><b>Language processing in healthy and brain-damaged populations</b> (The topic is already taken.)</p> <p>Christina Manouilidou, assoc. prof.</p> <p>Faculty of Arts, Department of Comparative and General Linguistics</p> <p>email: <a href="mailto:christina.manouilidou@ff.uni-lj.si">christina.manouilidou@ff.uni-lj.si</a></p> <p>web: <a href="https://sites.google.com/site/christinamanouilidou/">https://sites.google.com/site/christinamanouilidou/</a></p>	<p>The general topic of the project falls in the areas of Psycholinguistics and Neurolinguistics. The research questions we will tackle are the following: what are the mechanisms of language processing? How do we recognize words? How do we process sentences? In what way is language processing compromised when the brain is affected? A special focus will be given on language degradation as a result of neurodegenerative diseases, such as various types of dementia, and on how language could be used as a diagnostic tool for dementia.</p>		<p>Introductory knowledge of linguistics, familiarity with linguistic terms, experience with experimental design and statistical analysis are a must. Familiarity with behavioral and/or electrophysiological and neuroimaging methodologies is desired. Contact the supervisor for more info.</p>	<p>Places: 1-2   Level: S-I</p> <p><u>The project is not available for WS 20/21.</u></p>
<p><b>Factors of performance in cognitive tests for measuring executive functions</b></p> <p>Anja Podlesek, prof. / Luka Komidar, assist. prof.</p> <p>Department of Psychology, Faculty of Arts</p> <p>email: <a href="mailto:anja.podlesek@ff.uni-lj.si">anja.podlesek@ff.uni-lj.si</a></p>	<p>The goal of the research is to study how performance in cognitive tests measuring executive functions (updating, inhibition, switching, planning) and psychometric characteristics of these tests are related to different variables such as personality (conscientiousness, neuroticism), prior experiences (practice, experience with similar tasks, playing videogames), task characteristics (single vs. dual tasks; time limited vs. time unlimited tasks) and other situational factors (e.g. test situation, instructions, feedback). Variables of interest can be freely chosen by the student.</p>	<p>If students have access to cognitive and other types of tests (e.g., they use tests from open access test batteries), remote collaboration is possible.</p>	<p>Experience with experimental designs, knowledge in psychometrics and multivariate statistical analysis.</p>	<p>Places: 1-2   Level: S-I (possibly MA)</p>

<p><b>Investigation of changes in cognitive test performance during cognitive training</b></p> <p>Anja Podlesek, prof.</p> <p>Department of Psychology, Faculty of Arts</p> <p>email: <a href="mailto:anja.podlesek@ff.uni-lj.si">anja.podlesek@ff.uni-lj.si</a></p>	<p>E.g.: study of self-reported changes in strategies used, changes in eye movements or physiological measures.</p>	<p>If students have access to cognitive tests and plan to use self-report measures or specific behavioral measures which do not require the use of specific research equipment (e.g. eye-tracker), remote collaboration is possible.</p>	<p>Experience with experimental designs, knowledge in statistical analysis. In case of using eye-tracker or other physiological measures, prior experience is beneficial.</p>	<p>Places: 1-2   Level: S-I (possibly MA)</p>
<p><b>Development of an interactive cognitive training for the elderly</b></p> <p>Anja Podlesek, prof.</p> <p>Department of Psychology, Faculty of Arts</p> <p>email: <a href="mailto:anja.podlesek@ff.uni-lj.si">anja.podlesek@ff.uni-lj.si</a></p> <p><i>in collaboration with</i></p> <p>Andrej Košir, prof.</p> <p>LUCAMI lab, Faculty of Electrical Engineering,</p> <p>web: <a href="https://www.lucami.org/en/">https://www.lucami.org/en/</a></p>	<p>We would like to develop a multicomponent training of executive functions that older people will be able to carry out at home with help of smart technology.</p>	<p>Theoretical work and development of the training design is possible in the remote format. For design implementation, work in the LUCAMI lab is required.</p>		<p>Places: 1-2   Level: S-I (possibly MA)</p>

<p><b>Decision-Making</b></p> <p>Toma Strle, assist. prof. Faculty of Education, Center for Cognitive Science email: <a href="mailto:toma.strle@pef.uni-lj.si">toma.strle@pef.uni-lj.si</a> web: <a href="https://www.pef.uni-lj.si/1114.html">https://www.pef.uni-lj.si/1114.html</a></p>	<p>The goal of the project is to explore one of the following aspects of decision-making: The role of self-referential processes in decision-making (e.g., the role of self-understanding, metacognition — e.g., metacognitive feelings —, beliefs about one’s agency); Exploring the differences and similarities between first- and third-person accounts of decision-making; Differences and similarities between decision-making in everyday life and decision-making in the lab (alternatively, between hypothetical and real choice); Embodied, enactive and/or predictive processing accounts of decision-making.</p>	<p>Possible also in distance learning format.</p>	<p>Contact the supervisor, state your background and interest, and which subtopic you would be interested in. If motivated, other topics on decision-making may be agreed upon. In this case, students should send a brief — but specific — description of their project proposal.</p>	<p>Places: 1-2   Level: S-I &amp; MA</p>
<p><b>The experience of choice in everyday life</b></p> <p>Toma Strle, assist. prof. Faculty of Education, Center for Cognitive Science email: <a href="mailto:toma.strle@pef.uni-lj.si">toma.strle@pef.uni-lj.si</a> web: <a href="https://www.pef.uni-lj.si/1114.html">https://www.pef.uni-lj.si/1114.html</a></p>	<p>The aim of the project is to investigate how people experience the process of decision-making and choice in everyday life.</p>	<p>Possible also in distance learning format (theoretical work); if empirical work, please contact the supervisor.</p>	<p>Contact the supervisor and state your interests.</p>	<p>Places: 1-2   Level: S-I &amp; MA</p>

<p><b>Looping minds: Exploring (Im)Possible Ways in Which Cognitive Science Might Exert Influence on Its Findings</b></p> <p>Toma Strle, assist. prof. Faculty of Education, Center for Cognitive Science email: <a href="mailto:toma.strle@pef.uni-lj.si">toma.strle@pef.uni-lj.si</a> web: <a href="https://www.pef.uni-lj.si/1114.html">https://www.pef.uni-lj.si/1114.html</a></p>	<p>Contemporary cognitive science is opening up space for new understandings of what it means to be a human mind. It thus has the potential to change how people understand themselves. The following possibility arises: by changing people's beliefs about their mind and behaviour, cognitive science potentially exerts influence on how participants behave in experimental settings, thereby affecting its very findings about the human mind. The goal of the project would be to explore (im)possible ways in which cognitive science's view(s) of the human mind — as received and understood by individuals or the society — influence its empirical findings. The specific research question would be specified in more detail according to students' interest and background. (E.g.: How, if at all, would the belief that the human mind is more or less a mechanism exert influence on how one perceives and exerts self-control and how, if at all, would that affect research findings on matters related to human agency? In a different context: How would extensive change to our choice environments affect our attitudes towards decision-making and action and how, if at all, would that alter the desired effects of the implemented changes or how we go about making choices?)</p>	<p>Possible also in distance learning format.</p>	<p>Contact the supervisor, state your interest and background, and how you would approach the topic.</p> <p>Places: 1   Level: S-I &amp; MA</p>
<p><b>Autonomy: philosophical analysis and challenges to autonomy from new cognitive technologies</b></p> <p>Olga Markič, prof. Faculty of Arts, Department of Philosophy email: <a href="mailto:olga.markic@ff.uni-lj.si">olga.markic@ff.uni-lj.si</a> web: <a href="http://oddelki.ff.uni-lj.si/filo/english/staff/markica.htm">http://oddelki.ff.uni-lj.si/filo/english/staff/markica.htm</a></p>	<p>The aim of the project is to explore the impact of new cognitive technologies on autonomy.</p>	<p>Possible on-line.</p>	<p>Contact the supervisor, state your interest and background, and how you would approach the topic.</p> <p>Places: 1-2   Level: S-I</p>

<p><b>Cognitive science in the world of sport</b></p> <p>Olga Markič, prof. Faculty of Arts, Department of Philosophy</p> <p>email: <a href="mailto:olga.markic@ff.uni-lj.si">olga.markic@ff.uni-lj.si</a></p> <p>web: <a href="http://oddelki.ff.uni-lj.si/filo/english/staff/markica.htm">http://oddelki.ff.uni-lj.si/filo/english/staff/markica.htm</a></p>	<p>The aim of the project is to explore the relations between cognitive science and sport. Specific topics may include: Cognitive enhancement in sport and the question of doping; Embodied cognition and sport; Consciousness and sporting skills.</p>	<p>Possible on-line.</p>	<p>Contact the supervisor, state your interest and background, and how you would approach the topic.</p>	<p>Places: 1-2   Level: S-I</p>
<p><b>Francisco Varela's work on life, mind, and consciousness</b></p> <p>Sebastjan Vörös, assist. prof.</p> <p>Faculty of Arts, Department of Philosophy</p> <p>email: <a href="mailto:sebastjan.voros@ff.uni-lj.si">sebastjan.voros@ff.uni-lj.si</a></p>	<p>The aim of the project is to explore Francisco Varela's work on life, mind, and consciousness.</p>	<p>Please contact project supervisor.</p>	<p>Contact the supervisor, state your interest and background.</p>	<p>Places: 1-2   Level: S-I</p>
<p><b>Computational philosophy</b></p> <p>Borut Trpin, assist. prof.</p> <p>Faculty of Arts, Department of Philosophy &amp; LMU München</p> <p>email: <a href="mailto:borut.trpin@gmail.com">borut.trpin@gmail.com</a></p>	<p>We will address some recent topic in epistemology and/or philosophy of science by means of computer simulations. The goal is for the students to develop first-hand experience about computational methods in philosophy and at the same time investigate open philosophical questions.</p>	<p>Possible only in distance format.</p>		<p>Places: 2   Level: S-I</p>

<p><b>Explainable Machine Learning</b></p> <p><b>Explainable Machine Problem-Solving</b></p> <p>Ivan Bratko, prof.</p> <p>Faculty of Computer and Information Science, Artificial Intelligence Lab</p> <p>email: <a href="mailto:bratko@fri.uni-lj.si">bratko@fri.uni-lj.si</a></p> <p>web: <a href="https://fri.uni-lj.si/en/laboratory/lui">https://fri.uni-lj.si/en/laboratory/lui</a></p>	<p>Explainable AI has recently become a very popular topic of AI research and applications. The reason is that some of the most powerful AI methods are very hard to be understood by humans. So they behave just like black boxes and their results hard to interpret. The most famous example of this are deep artificial neural networks. In these projects, ideas of turning these methods into “transparent boxes” with interpretable results will be explored.</p>	<p>Possible also in distance format.</p>	<p>Basics of AI.</p>	<p>Places: 3   Level: S-I</p>
<p><b>Machine learning and natural language processing</b></p> <p>Marko Robnik Šikonja, prof.</p> <p>Faculty of Computer and Information Science, Laboratory for Cognitive Modeling</p> <p>email: <a href="mailto:marko.robniksikonja@fri.uni-lj.si">marko.robniksikonja@fri.uni-lj.si</a></p> <p>web: <a href="https://www.fri.uni-lj.si/en/laboratory/lkm">https://www.fri.uni-lj.si/en/laboratory/lkm</a>, <a href="https://www.fri.uni-lj.si/en/employees/marko-robnik-sikonja">https://www.fri.uni-lj.si/en/employees/marko-robnik-sikonja</a></p>	<p>Topics: Machine learning Natural language processing</p>	<p>Possible also in distance format.</p>	<p>Contact the supervisor and state your interest.</p>	<p>Places: 1-2   Level: S-I</p>

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**Other projects**

Anka Slana Ozimič

Various laboratories and departments

email:

[anka.slana@psy.ff.uni-lj.si](mailto:anka.slana@psy.ff.uni-lj.si)

If you do not find a topic of your interest among the projects offered, please contact us about more possibilities. We are also connected with experts from the other fields of research (e.g., gait and cognition, psychedelics, music perception and cognition, cognitive modeling, natural language processing, user experience, virtual reality, etc.).

Contact the responsible (contact person) and state your interests.

Places: N/A | Level: S-I & MA

## Projects at the University of Vienna

<i>Project</i>	<i>Description</i>	<i>COVID-19</i>	<i>Qualifications</i>	<i>Places</i>	<i>Level</i>
<b>Innovation, organization(-al cognition), design, and Enabling Spaces</b> <a href="#">Univ. Prof. Dr. Markus Peschl</a> Cognitive Science research Platform & Dept. of Philosophy <a href="#">website</a>	Our guiding question concerns the topic of “how does novelty come into the world?”. Projects are offered in the fields of innovation (theoretical as well as applied projects; on an individual/cognitive and/or on a collective/ organizational level), creativity, design, organizational design, as well as studying and developing how space enables and supports innovation- and knowledge work (e.g., in the sense of the extended/enacted cognition approach), and how such spaces can be designed. Projects range from (but are not limited to) theoretical foundations (cognitive, epistemological, organizational, systems science, etc.), educational issues, such as acquiring innovation skills and mindsets, to the design of Enabling Spaces, such as office spaces or learning environments. Project work in small groups/teams is welcome.		Interest and some experience in innovation, design, architecture, openness, and creativity	2-3	IR II S-I MA
<b>Praxis- &amp; Forschungsprojekt Spielstadt Wien 2020</b> <a href="#">Univ. Prof. Dr. Markus Peschl</a> <a href="#">Leonie Jung-Irrgang</a> Dept. of Philosophy <a href="#">website</a>	Spielstädte sind Spiel- und Lernräume, in denen Kindern und Jugendlichen eine Stadtkulisse als Aktionsfläche zur Verfügung gestellt wird. Die Spielinhalte ergeben sich aus der komplexen Lebenswelt Stadt, die sich in zahlreichen Einrichtungen widerspiegelt, in denen die Kinder arbeiten und Geld verdienen: darunter Werkstätten, Geschäfte, Nahverkehr, Bank, Post, Rathaus und Müllabfuhr. Es entwickelt sich ein Stadtgefüge mit Politik und Kultur, Produktion, Geld- und Warenzirkulation und öffentlichem Leben, dessen Komplexität sich im Laufe der Spielzeit zunehmend verdichtet. Website:		Fluent German. Anwesenheit in Wien auch im Juli 2020. Interesse an Projektarbeit, alternativen Bildungsideen, künstlerischer Praxis, Freude an der Arbeit mit Kindern und Lust auf eine bunte Runde		

<p><b>Foundations of Sand? Revisiting Psychology's Classic Experiments</b>  <a href="#">Alexander Batthyany</a>  Dept. of Philosophy</p>	<p>In recent years, it has been suggested that a number of psychology's "classical" findings, such as Zimbardo Prison Study and Milgram's Obedience experiment, may need to be reassessed – because the relative high effect sizes reported in these studies appear to be, at least in part, the product of a self-selection process of subjects: For example, in Milgram's Obedience experiment, a substantial number of the volunteer subjects refused to even take part in the experiment when they learned that they had to administer electric shocks to other subjects. In other words, the relatively high percentage of overly obedient („sadistic“) behaviour which Milgram reported may partially be based on the fact that only subjects who were willing to hurt other subjects were counted to begin with. Similar accounts (i.e. a tendency to report artifacts and take them as soundly based in an appropriate theoretical context and vice versa) may be put forth with regards to other, more recent classics (such as Baumeister's Ego Depletion experiments, and a number of findings reported in social psychology, such as Bargh's famous priming experiments). Recent initiatives, such as <a href="http://www.psychfiledrawer.org">www.psychfiledrawer.org</a> and the Journal of Articles in Support of the Null Hypothesis (<a href="http://www.jasnh.com">www.jasnh.com</a>) therefore attempt to instigate a careful reinvestigation of what perhaps has been taken for granted for far too long. Projects in this lab will look at some hitherto rarely questioned classical or famous experiments in psychology and test alternative accounts, the possibility of artifacts and conscious or unconscious contaminations of experimental research in (social) psychology.</p>	<p>Courage to question "established" findings and their underlying theories and models; ability to question, reason, and carefully design original experimental studies; moderate to intense liking of diving into controversy. Tutor will be glad to help getting results published.</p>	<p>4  IR II  S-I  MA</p>
<p><b>Impact of Control and Free Will Beliefs on Thought and Behaviour</b>  <a href="#">Alexander Batthyany</a>  Dept. of Philosophy</p>	<p>Recent evidence (see link) suggests that people's behaviour (such as altruistic helping, cheating, etc.) is, at least in part, a function of their belief in free will. Manipulating people's belief in their free will thus has significant consequences on their behaviour. To this date, however, only a very limited range of behavioural measures have been employed. The proposed projects may test for the scope and limits of the control-belief effect, or may test alternative explanations of the effects.</p>	<p>Interest in interdisciplinary research and existential issues such as free will, determinism, etc., interest in designing experiments in the border area between psychology, philosophy, and world-view studies.</p>	<p>2  IR II  S-I  MA</p>

<p><b>Existential Cognition: Life and Death and our Minds</b></p> <p><a href="#">Alexander Batthyany</a></p> <p>Dept. of Philosophy</p>	<p>Testing the impact of (subtle) reminders (priming) of death and mortality on thought and behaviour as described by TMT. According to TMT, people try to keep awareness and anxiety of their inescapable death at bay by employing a number of defenses - such as merging with an in-group (such as religious denominations, political ideologies, etc.), or submitting to a leader (Messiah, dictator, liberator) or adhering to "cultural values" (i.e. placing higher values on brand products, etc.). Projects are welcome which are (a) broadening the scope of Terror Management Theory, (b) testing alternative models of TMT, (c) testing the boundary conditions of TMT.</p>	<p>Interest in interdisciplinary research (i.e. the philosophy and psychology of death and dying, existentialism, cognitive science). Also some interest in studying social injustice, prejudices, dogmatism, etc. which, according to the theory to be tested, is indirectly related to our unwillingness to confront the existential fact that there is a potential conflict between our will to survive and our knowledge that we won't.</p>	<p>3</p> <p>IR II S-I MA</p>
<p><b>Making different tools from the same material in Goffin's cockatoos</b></p> <p><a href="#">Alice Auersperg</a></p> <p>Messerli Research Institute, Comparative Cognition Unit/Goffin Lab</p> <p><a href="#">website</a></p>	<p>Goffin's cockatoos have the capacity to make and use tools. In order to determine ability to plan the function of a tool during manufacture, we will test if they can use the same material to make up to three tools for completely different purposes.</p>	<p>BA, experiments in handling animals, preferably experience in behavioural experiments</p>	<p>1</p> <p>MA</p>
<p><b>Composite tool manufacture in Goffin's cockatoos</b></p> <p><a href="#">Alice Auersperg</a></p> <p>Messerli Research Institute, Comparative Cognition Unit/Goffin Lab</p> <p><a href="#">website</a></p>	<p>Composite tool use is an important aspect of human technical evolution. Goffin's cockatoos have the capacity to make and use tools and they are stacking objects during object play. Here we will test if they can purposely create a functional tool by adding several separate components.</p>	<p>BA, experiments in handling animals, preferably experience in behavioural experiments</p>	<p>1</p> <p>MA</p>

<p><b>Picture-object discrimination in kea</b></p> <p><a href="#">Dr. Raoul Schwing</a></p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p><a href="#">website</a></p>	<p>Picture-object recognition is a common field of research, but often it is unclear from the results if the animal generalized from one to the other type of stimulus, or equated them. This project would standardize the view of both the objects and pictures of the same to determine if kea can recognize the difference between a 2D picture and a 3D object. This can also be expanded on to investigate the factors that increase picture-object discrimination.</p>	<p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> <p>For projects shorter than MSc-thesis work (i.e. IR-II or S-I), please contact Dr. Schwing directly</p>	1	MA
<p><b>Matching-to-sample with real objects in kea</b></p> <p><a href="#">Dr. Raoul Schwing</a></p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p><a href="#">website</a></p>	<p>Matching-to-sample is a widely used tool of animal cognition research. The aim of the project is to train the kea on this testing format, to allow for future application. Time permitting these could already be explored in the frame of this project. Examples: real object categorisation, facial recognition, number-quantity association</p>	<p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> <p>For projects shorter than MSc-thesis work (i.e. IR-II or S-I), please contact Dr. Schwing directly</p>	1	MA
<p><b>Generativity theory in kea: linear reward sequence</b></p> <p><a href="#">Dr. Raoul Schwing</a></p> <p>Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna)</p> <p><a href="#">website</a></p>	<p>The Epstein/Köhler insight experiment has been tested with a variety of animals. The subject is trained on the individual steps required to solve a problem, and is then required to string these together into a sequence that allows the solution of a novel reward scenario. This project will test this phenomenon in kea.</p>	<p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p> <p>For projects shorter than MSc-thesis work (i.e. IR-II or S-I), please contact Dr. Schwing directly</p>	1	MA

<p><b>Same/Different discrimination learning and the role of entropy</b></p>	<p>The understanding of relations, such as 'same' and 'different' can be advantageous for animals in many aspects of their life and may employ various cognitive mechanisms. This project aims to train kea on discriminating between sets of identical and different symbols. Once learned, it will be tested whether this was achieved by the formation of relational concepts, or was based on feature learning. Further, it will be investigated to what extent entropy perception might account for such categorizations.</p>	<p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p>	<p>1</p>	<p>MA</p>
<p><a href="#">Dr. Raoul Schwing</a> Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna) <a href="#">website</a></p>		<p>For projects shorter than MSc-thesis work (i.e. IR-II or S-I), please contact Dr. Schwing directly</p>		
<p><b>Video-image recognition</b></p>	<p>A large collaboration is being set up to investigate the ability of several bird species to imitate. In this pilot study we want to investigate if kea can recognize real world individuals/objects/situations from a video recording. This study will attempt to determine if kea can retrieve information on the solution of a task from watching a demonstrator on a video recording. The study can be expanded if necessary to investigate the boundaries between moving video and alternating pictures in the visual process.</p>	<p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p>	<p>1</p>	<p>MA</p>
<p><a href="#">Dr. Raoul Schwing</a> Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna) <a href="#">website</a></p>		<p>For projects shorter than MSc-thesis work (i.e. IR-II or S-I), please contact Dr. Schwing directly</p>		
<p><b>Time-delayed access affects solution time</b></p>	<p>Previous studies have shown that kea can decrease their time to solve a task after watching a conspecific solve the same task. The general theory would suggest that the kea learned from the actions of their peers, however there is the chance that the delayed access to the apparatus allowed the waiting kea to contemplate possible solutions. Here we investigate the effect of having visual access to a technical problem before gaining physical access to solve it, when compared to direct physical access.</p>	<p>good communication skills, time management, problem solving, experience with animals highly recommended i.e. patient, observant</p>	<p>1</p>	<p>MA</p>
<p><a href="#">Dr. Raoul Schwing</a> Kealab, Messerli Research Institute (University of Veterinary Medicine, Vienna) <a href="#">website</a></p>		<p>For projects shorter than MSc-thesis work (i.e. IR-II or S-I), please contact Dr. Schwing directly</p>		

<b>Art history and empirical methods</b>	<p>The aim of the Laboratory for Cognitive Research in Art History (CReA) is to expand art historical knowledge through the use of empirical and experimental methods. The laboratory's projects deal with traditional art historical questions about artworks and their perception as well as transdisciplinary issues of empirical aesthetics, visual culture and museology. Classical methods of art history are combined with digital humanities and social science approaches – from discourse analysis to database construction, from online questionnaires to open interviews and mapping. Research into eye movements, investigated during the beholding of art with remote and mobile eye trackers, is an area of special interest.</p>	<p>Please contact the project head for information about possible projects</p>	<p>Interest in empirical work in combination with art-historical questions.</p>	<p>1-2</p>	<p>IR II, S-I- PJ, MA</p>
<b>Improvisation</b>  <a href="#">Dr. Lukas Zenk</a>	<p>The aim of this research project is to develop a framework for organizational improvisation. In this framework, factors for the complex and multidimensional ability of people to improvise in their organizational situation will be identified and described. Based on this basic scientific research, the framework will be used to develop prototypical designs for interventions in order to practically support the improvisational ability of people in organizations. (<a href="http://www.improvisation.science">www.improvisation.science</a>)</p>	<p>Virtual collaborations possible. Please contact Dr. Lukas Zenk</p>		<p>1-2</p>	<p>IR II S-I</p>
<b>Lexical and morphological acquisition</b>  <a href="#">Prof. Wolfgang Dressler</a>	<p>Acquisition of lexical or morphological elements from a point of view of cognitive science: typical or handicapped development</p>		<p>psycholinguistics</p>	<p>3</p>	<p>IR II S-I MA</p>
<p>Department of Linguistics, University of Vienna</p>					

<b>Word-formation constructions / Cognitive linguistics and corpus linguistics</b>	Usage-based research on the word-formation patterns in a language. The approach followed is a distributional one, i.e. the combinatorial properties of an element (a piece of word structure) in a corpus serve for that element's identification and definition. The goal is to better understand the nature of the pieces of structure that serve for construction of words.	Specialization in cognitive linguistics and corpus linguistics / Basic knowledge in linguistics	1	IR II S-I MA
<a href="#">Dr. Stela Manova</a>				
ICLTT/Philosophy				
<a href="#">web</a>				
<b>Word-formation in the mental lexicon / Cognitive linguistics and psycholinguistics</b>	This research is with a focus on the organization of the mental lexicon. By testing native-speaker intuitions, the idea is to establish what is listed in the lexicon and how words are constructed there.	Specialization in cognitive linguistics and psycholinguistics / Basic knowledge in linguistics	1	IR II S-I MA
<a href="#">Dr. Stela Manova</a>				
ICLTT/Philosophy				
<a href="#">web</a>				
<b>Natural Language Processing (NLP) without grammar: algorithms and applications</b>	Recent approaches to NLP do not involve grammar (linguistic information of any kind) but treat all words as units of the same type and model human language with the help of neural networks that, roughly speaking, control for frequency of use of words and their combinations (n-grams). In a similar fashion, this project seeks to establish the possible applications of NLP based on algorithms (with a focus on the Fibonacci sequence), n-grams and frequency.	Specialization in cognitive linguistics and psycholinguistics / Basic knowledge in linguistics	1 (+1)	MA (+ IR-II, S-I)
<a href="#">Dr. Stela Manova</a>				
ICLTT/Philosophy				
<a href="#">web</a>				

<p><b>Individual differences in second/foreign language learning (including polyglotism, and language learning through non-formal methods).</b></p>	<p>For students interested into second language acquisition in general, but especially the psycho-cognitive aspects of individual differences in language learning ability (language aptitude) and interfaces to other cognitive systems (musicality, personality, memory...) and language learning methods in non-formal circumstances (e.g. online, new media).</p>	<p>It should be possible according to the current rules and regulations (subject to the provisions) to meet on site in the lab/office/department with mask and caring for safety distances. Naturally a large proportion (&gt;50%) of work can always be carried out from home / distance (home office principle). Online/virtual discussion meetings also possible.</p>	<p>Experience in or interest for testing human participants, knowledge about psychometrics, statistics (e.g. SPSS, Excel), qualitative/and or quantitative psycho-social research methods. Willingness to pursue secondary research on theoretical and practical aspects concerning the individual project.</p>	<p>1</p>	<p>IR II S-I (10 ECTS) MA(?)</p>
<p><a href="#">Susanne Maria Reiterer</a> Unit of Language Learning and Teaching Research</p>	<p>A second research focus concerns non-formal language learning strategies which are emerging nowadays in multilingual societies or areas, as e.g. the phenomenon of the "language cafe".</p>	<p>It should be possible according to the current rules and regulations (subject to the provisions) to meet on site in the lab with mask and caring for safety distances. Naturally a large proportion (&gt;50%) of work can always be carried out from home / distance (home office principle). Availability of cafes is problematic in COVID times generally because of governmental restrictions in public places/gastronomy.</p>	<p>Experience in or interest for testing human participants, knowledge about psychometrics, statistics (e.g. SPSS, Excel), qualitative/and or quantitative psycho-social research methods. Willingness to pursue secondary research on theoretical and practical aspects concerning the individual project.</p>	<p>1</p>	<p>IR II S-I (10 ECTS) MA(?)</p>
<p><a href="#">Susanne Maria Reiterer</a> Unit of Language Learning and Teaching Research</p>					

<p><b>The (phon)aesthetics of second language learning – phonetic chill</b> <a href="#">Susanne Maria Reiterer</a></p>	<p>This new research project focuses on the aesthetic, psycho-acoustic, cognitive, social and emotional motivations of why individuals report to perceive certain foreign languages as more “attractive”, “melodious” etc. and thus more rewarding/interesting to be learned. For students interested in foreign languages, especially sounds of languages.</p>	<p>It should be possible according to the current rules and regulations (subject to the provisions) to meet on site in the lab with mask and caring for safety distances. Naturally a large proportion (&gt;50%) of work can always be carried out from home / distance (home office principle).</p>	<p>Experience in or interest for acoustic stimulus creation, human voice, voice recordings, testing human participants, knowledge about psychometrics, acoustic software (e.g. Praat, Adobe Audition). Willingness to pursue secondary research on theoretical and practical aspects concerning the individual project.</p>	<p>1</p>	<p>IR S-I (10 - 15 ECTS) MA</p>
<p><b>Literary and Cultural Representations of Emotion</b> <a href="#">Christa Knellwolf King</a></p>	<p>The research project investigates new methodologies for the interpretation of literary and cultural representations of emotion.</p>		<p>Interest in the interdisciplinary crossovers between literary studies and scientific approaches</p>	<p>1</p>	<p>IR II</p>
<p><b>Models of Personality and Emotions</b> <a href="#">Paolo Petta</a> Institute for Artificial Intelligence, Medical University of Vienna <a href="#">web</a></p>	<p>Project work, optionally also as complement to the related courses</p>			<p>3-4</p>	<p>S-I</p>

<p><b>Serious Games in Health Care</b>  <a href="#">Paolo Petta</a>  Intelligent Software Agents and New Media at OFAI (Austrian Research Institute for Artificial Intelligence)</p>	<p>We are looking for students interested to conduct research in a range of disciplines in the domain of serious games in health care. Candidates will gain a broad overview of the state of the art in serious games research before focusing on a specific research topic. You will familiarise with the many perspectives and steps required in implementing a serious games project, from a first idea to a full concept that is scientifically sound, features interesting and conducive game mechanics, and is viable for practical deployment of impact.</p>	<p>Articulated interest (expression of motivation) in some sub-area of the application domain. Working knowledge of the cores of cognitive science paradigms and their implications in specific application settings. Availability for continuous active participation in group work and capability of carrying out assigned tasks (specifics to be developed individually).</p>	<p>3-4</p>	<p>S-I MA</p>
<p><b>[See description]</b>  <a href="#">Soheil Human</a>  Institute of Information Systems and New Media, Vienna University of Economics (WU Wien)</p>	<p>If you are interested in research on</p> <ul style="list-style-type: none"> <li><b>Accountability and controllability of computational cognitive models</b></li> <li><b>Cognitive Personal Assistant Systems</b></li> <li><b>Human needs</b></li> <li><b>Human values</b></li> <li><b>Societal consequences of cognitive modeling</b></li> <li><b>Predictive processing</b></li> <li><b>Framing of information system (nudging)</b></li> <li><b>Cognitive user interfaces</b></li> <li><b>Cognitive information economies</b></li> <li><b>Social imaginaries</b></li> <li><b>Human-computer interaction</b></li> <li><b>Intersection of European General Data Protection Regulation (GDPR) and Computational Cognitive Modeling</b></li> <li><b>Semantic Web Technologies, Knowledge Engineering and Ontology development</b></li> <li><b>Application of computational cognitive modeling from socioeconomic perspective</b></li> </ul> <p>please make an appointment for more details.</p>	<p>Please make an appointment for more details</p>	<p>1-2</p>	<p>IR II S-I</p>

<p><b>Incentivising Open Data Exploration through Needs Management</b></p> <p><a href="#">Soheil Human</a></p> <p>Institute of Information Business at the Vienna University of Economics and Business</p>	<p>Needs satisfaction plays a fundamental role in well-being of biological cognitive systems, including humans. Hence, Understanding citizens' needs is crucial for developing a successful social and economic policy. This notwithstanding, acquisition, representation, analysis, and visualisation of citizens' needs remain areas where support by dedicated computational tools is very limited. Also applications of needs data in the design of online services has not been thoroughly analyzed.</p> <p>The goal of this project is to use existing needs profiles for organizing the catalogs of Open datasets and Open Data Apps, available at at the Open Government Portal of Vienna (<a href="https://open.wien.gv.at/site/open-data/">https://open.wien.gv.at/site/open-data/</a>) and at the independent Austrian Open Data Portal (<a href="https://opendataportal.at">https://opendataportal.at</a>).</p> <p>[BFUP] Beno, M., Figl, K., Umbrich, J., Polleres, A. (2017) Open Data Hopes and Fears: determining the barriers of Open Data. CeDEM 2017 <a href="https://aic.ai.wu.ac.at/~polleres/publications/Beno-et-al-2017CeDEM.pdf">https://aic.ai.wu.ac.at/~polleres/publications/Beno-et-al-2017CeDEM.pdf</a></p> <p>[HFKS] Human, S., Fahrenbach, F., Kragulj, F., Savenkov, V. (2017). Ontology for Representing Human Needs. Proc. of 12th Intl. Conference on Knowledge Engineering and Semantic Web, Szczecin, Poland. (to appear: see preprint at <a href="https://github.com/openeed/ond-family">https://github.com/openeed/ond-family</a>)</p> <p>[OpeN] The OpeNeed Ontology: <a href="https://github.com/openeed">https://github.com/openeed</a></p> <p>[KaK] Kaiser, A., &amp; Kragulj, F. (2016). Bewextra: Creating and Inferring Explicit Knowledge of Needs in Organizations. Journal of Futures Studies, 20(4): pp. 79-98.</p> <p>[Dea1] Dean, H. (2014). Understanding human need. Bristol: Policy Press.</p>	<p>Internship position 1</p> <p>You will develop a web catalog of open datasets and apps based on different principles of artefact grouping. Given an existing citizen's need profiles (encoded as the ontology [OpeN]), a correspondence between the needs on the one hand, and datasets and apps on the other hand will be established, and the digital artefacts (datasets &amp; apps) will be grouped according to needs they are related to. A user-experience experiment will be conducted to compare the traditional interface (based on predefined categories) and the need-based one to assess if organising the data according to the identified needs has positive impact on user experience, and motivate users to invest time into exploring Open Data.</p>	<p>IR II S-I</p>
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<p><b>Ontology Representation of Needs Profiles</b></p> <p><a href="#">Soheil Human</a></p> <p>Institute of Information Business at the Vienna University of Economics and Business</p>	<p>Needs satisfaction plays a fundamental role in human well being [TaD]. Hence understanding citizens' needs is crucial for developing a successful social and economic policy [Dea1, Dea2]. This notwithstanding, the concept of need has not yet found its place in systems and online tools for citizen participation. In fact, assessing needs itself remains a labor-intensive, mostly offline activity, where only a limited support by computational tools is available.</p> <p>While only a few methodologies for assessing and systematizing needs exist to date, including BEWEXTRA [KaK] developed in the WU Vienna, acquisition, representation and analysis of citizens' needs remain areas where support by dedicated computational tools is either limited or not existing.</p> <p>[Dea1] Dean, H. (2014). Understanding human need. Bristol: Policy Press.</p> <p>[Dea2] Dean, H. (2015). Social rights and human welfare. London: Routledge.</p> <p>[HFKS] Human, S., Fahrenbach, F., Kragulj, F., Savenkov, V. (2017). Ontology for Representing Human Needs. Proc. of 12th Intl. Conference on Knowledge Engineering and Semantic Web, Szczecin, Poland. (to appear: see preprint at <a href="https://github.com/openeed/ond-family">https://github.com/openeed/ond-family</a>)</p> <p>[OpeN] The OpeNeed Ontology: <a href="https://github.com/openeed">https://github.com/openeed</a></p> <p>[KaK] Kaiser, A., &amp; Kragulj, F. (2016). Bewextra: Creating and Inferring Explicit Knowledge of Needs in Organizations. Journal of Futures Studies, 20(4): pp. 79-98.</p> <p>[TaD] Tay, L., &amp; Dieer, E. (2011). Needs and subjective well-being around the world. Journal of personality and social psychology, 101(2): 354.</p>	<p>Internship position</p> <p>1</p> <p>In this project you will contribute to the creation of such tools by continuing the digitalization of a needs study, conducted with the citizens of the Vienna quarter Stuwerviertel following the BEWEXTRA methodology [HFKS]. You will help presenting the results of the study with an increased granularity using the OpeNeed ontology [OpeN], and then use SPARQL query language to provide examples of semantic queries against the resulting needs data. The project paper will report on your experiences and ideas for the improvement of OpeNeed, and analyze ways of improving computer support for needs assessment.</p>	<p>IR II S-I</p>
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<b>Rethinking Homeorhesis in Biomedical Contexts</b>	<p>Biomedical sciences and psychopharmacology draw primarily from the medical model of disease that provides a conceptual framework for the disease-centered model of drug action. This model presupposes that mental disorders are based on a derailment of brain homeostasis. Increasingly more scientists have begun to critically question the disease-centered model of drug action. The shortcomings of the model derive from assumptions of monocausality and effect linearity largely based on a mechanistic view. Yet, explanations using homeostasis neglect ontogenetic trajectories and system-level responses of the organism.</p> <p>This project focuses on the reinstatement of the concept of homeorhesis to supplement explanations of homeostasis. Including homeorhesis as an explanatory process within the medical model aims at facilitating a conceptual shift from a disease-centered to a drug-centered view. To this end, the project aims at gathering converging evidence of psychotropic drug effects to support the idea of homeorhesis in biomedical contexts.</p>	Interest in philosophy and neurobiology	1	IR II S-I MA
<p><a href="#">Isabella Sarto-Jackson</a> KLI <a href="#">web</a></p>				
<b>Reputation-motivated prosocial behaviors</b>	<p>We are studying the neurohormonal basis of human motivation in social environments. More specifically, we test how social rewards and steroid hormones effect prosocial behavior.</p>	Interest in computational modelling	1-2	IR II S-I MA
<p><a href="#">Hana Kutlikova</a> Neuropsychopharmacology and Biopsychology Unit, Faculty of Psychology <a href="#">web</a></p>				

<b>Organizational learning and Knowledge based Management</b>	We do research in the field of knowledge based management and organizational learning. More precisely, we offer projects upon negotiation in the field of vision development, need-based innovation, organizational (un)learning and systemic coaching.	Motivation to work in an interdisciplinary team; some experience with qualitative research methods preferable; If field work is involved, German skills are necessary	1	IR II S-I
<a href="#">ao. Univ. Prof. Dr. Alexander Kaiser</a>  Research Group Knowledge based Management, Vienna University of Economics and Business  <a href="#">web</a>	The proposed IR2-topic deals with the operationalization of three previously identified types of knowledge in the context of need-based organizational learning. It is intended for students seeking to explore the intersections of cognitive science and business/organizational related fields in a practical yet interdisciplinary way. Detailed project description here.	Interest in interdisciplinary research and organizational learning.	1	IR II S-I
<a href="#">ao. Univ. Prof. Dr. Alexander Kaiser</a>  Research Group Knowledge based Management, Vienna University of Economics and Business  <a href="#">web</a>				

<p><b>Reflection about intercultural experiences – intercultural competence development</b></p> <p><a href="#">Ingrid Pleschberger</a>, BA BA MSc</p> <p>Head of International Office FH BFI Wien</p> <p><a href="#">web</a></p>	<p>Reflection is a widely acknowledged aspect of intercultural competence development. Accordingly, reflection activities such as learning journals or diaries are frequently used as measures to assess and/or facilitate intercultural competence development. However, there is currently no agreement on a uniform definition or a research-based model of reflection that explicitly incorporates intercultural competence (ICC) nor a model of ICC that incorporates reflection. This research aims at providing (1) a definition and concept of RIE, and (2) an operationalised instrument (interview guideline and coding scheme) to assess RIE</p>	<p>Possible tasks: Quantitative and qualitative data analysis of already existing data.</p> <p>Mai – June 2021 data collection (interviews and transcriptions will be paid) via jisti or if possible in person</p> <p>Theoretical work is also possible potential candidates can do the project fully online or a mixture online/on-site.</p>	<p>German and English language skills on a level that allows them to conduct and transcribe interviews And/or Experience with quantitative and qualitative data analysis</p>	<p>3</p>	<p>IR II</p> <p>S-I (10 - 20 ECTS)</p> <p>MA(?)</p>
<p><b>Experimental induction of social and non-social motivational states</b></p> <p><a href="#">Giorgia Silani</a> <a href="#">Ana Stijovic</a></p> <p>Department of Applied Psychology: Health, Development, Enhancement and Intervention</p> <p><a href="#">web</a></p>	<p>In this project, we investigate the effects of a period (8h) spent without social contact or without food on: stress levels (measured using physiological and subjective measures), affective states, motivation to engage with food-related and social content, and basic cognitive abilities.</p> <p>A short-term response to a homeostatic imbalance includes increased autonomic arousal and increased motivation to seek rewards that can relieve the aversive state and reestablish balance. In addition to basic survival systems, such as regulation of nutritional balance or defense from threat, it has been recently suggested that our need for affiliative social contact is regulated by a similar homeostatic system. Although we cannot directly test this idea, we aim to make a first step towards understanding effects of a short-term social isolation on the state of our body, self-reported affective states and motivated behavior, as opposed to a short-term reaction to fasting.</p>		<p>High flexibility, reliability, good time management, ability to work in a team, German and English proficiency</p>	<p>2 + 2</p>	<p>Internships (15h / week) + MA (start in Jan./ Feb. 2020)</p>

<p><b>New hypotheses for research on autism and music, Part 1: Large-scale replication of potential biomarkers in rs-fMRI</b></p>	<p><b>Background:</b> Autism is a “social disorder”, and music is a “social art”. Music therapy may help people with autism to develop social engagement, but mechanisms are not clear. Brain areas including the superior temporal sulcus (STS), right temporo-parietal junction (rTPJ), and right supramarginal gyrus (rSMG; relevant for empathy and theory of mind), and functional connectivity between auditory, motor, and sensory regions (relevant for sensorimotor integration) have been suggested to be of relevance. However, these findings were based on relatively small samples.</p> <p><b>Methods:</b> This project will aim to determine structural and functional differences or similarities between people with/without autism in relevant brain areas, using MRI and resting-state fMRI data from a large, publicly available dataset (ABIDE-I and ABIDE-II, combined n&gt;2000).</p> <p><b>Relevance:</b> Given the “replicability crisis” in psychology, the findings from this project will provide a solid basis for future intervention studies of music therapy and related interventions.</p> <p><b>Note:</b> Other projects related to music and autism using different methodology may become available; further information on request.</p>	<p>Desirable: experience with analysing fMRI data; programming skills in MATLAB (or R)</p>	<p>1-2</p>	<p>MA</p>
<p><b>New hypotheses for research on autism and music, Part 1: Large-scale replication of potential biomarkers in rs-fMRI</b></p>	<p><b>Background:</b> Many people with autism have a high interest or special skills in music; some can benefit from music-based interventions. However, little is currently known about the ways and the extent people with autism engage in music activities in daily life.</p> <p><b>Methods:</b> Based on previously constructed scales and a currently ongoing survey in other countries, a survey of music engagement will be conducted in an Austrian clinical sample (from clinical institutions in St. Pölten or Vienna, n=50-100) and a matched non-clinical sample.</p> <p><b>Relevance:</b> Better knowledge of music use in daily life, including functional uses of music, will be important to inform the development of future interventions for this population.</p>	<p>Survey methods experience</p>	<p>1</p>	<p>MA</p>

<p><b>New hypotheses for research on autism and music, Part 1: Large-scale replication of potential biomarkers in rs-fMRI</b></p>	<p><b>Background:</b> A large multinational randomised controlled trial of music therapy for children with autism spectrum disorder did not find clinical effects; this was in contrast to many smaller trials. One reason may be the heterogeneity of the population, in connection with the focus on a distal downstream outcome.</p> <p><b>Methods:</b> Re-analysis of an existing dataset (n=364) with a focus on individual symptoms that may be linked to specific mechanisms of joint music-making. Path models or structural equation models will be used to determine which of these symptoms at baseline are able to predict clinical benefits.</p> <p><b>Relevance:</b> Better understanding of who on the autism spectrum may be most likely to benefit from music therapy.</p>	<p>Structural equation modelling (SEM) experience</p>	<p>1</p>	<p>MA</p>
<p><a href="#">Giorgia Silani</a>, <a href="#">Christian Gold</a></p> <p>Department of Applied Psychology: Health, Development, Enhancement and Intervention</p> <p><a href="#">web</a></p>	<p>Research in the field of serious games, which deals with game based learning activities, has an almost 50-year history, and with the increasing use of games in parts of daily life, it is gaining more and more importance.</p> <p>Today we understand that engaging in activities that are serious (as in "meaningful", "purposeful") and mediated by games (as in "playful") require a context that respects the behavioural, affective, and cognitive components of the experience.</p> <p>We look forward to working with students who are interested in researching engagement with playful learning activities from primary school through tertiary education to adult education, with an emphasis on the cognitive component.</p>	<p>If you are motivated to do interdisciplinary research and have experience with computer games, we would be happy to discuss further details with you!</p>	<p>1-2</p>	<p>MA</p>
<p><b>Serious Games in Game Based Learning</b></p> <p><a href="#">Matthias Steinböck</a></p> <p>Digitalisation in Education, Centre for Teacher Education, University of Vienna</p>	<p>Research in the field of serious games, which deals with game based learning activities, has an almost 50-year history, and with the increasing use of games in parts of daily life, it is gaining more and more importance.</p> <p>Today we understand that engaging in activities that are serious (as in "meaningful", "purposeful") and mediated by games (as in "playful") require a context that respects the behavioural, affective, and cognitive components of the experience.</p> <p>We look forward to working with students who are interested in researching engagement with playful learning activities from primary school through tertiary education to adult education, with an emphasis on the cognitive component.</p>	<p>If you are motivated to do interdisciplinary research and have experience with computer games, we would be happy to discuss further details with you!</p>	<p>1-2</p>	<p>MA</p>

<b>Brain-Computer Interfaces</b>	Brain-Computer Interfacing (BCI) enables the control of external devices such as wheelchairs or robotic arms for severely paralyzed patients by mind control. Multiple projects of to advance the state-of-the-art in BCI are available within the research group Neuroinformatics, ranging from cognitive strategies for patient training over feedback design to neural decoding algorithms.	Students should have an interest in working in interdisciplinary research teams, be open to working with actual patients, and have basic programming skills.	IR II S-I MA
<a href="#">Moritz Grosse-Wentrup</a> Research Group Neuroinformatics, Faculty of Computer Science, University of Vienna <a href="#">web</a>			
<b>Conceptualizing exposure therapy as a dynamic feedback system</b>	We aim at better understanding and optimizing exposure therapy. Specifically, we investigate psychological, peripheral physiological and neuroimaging measures to computationally model exposure therapy as closed-loop feedback systems.	Motivation to conduct interdisciplinary experimental research; good organization and time management; creativity; basic programming skills (e.g. MATLAB, Python, R, ...) are an advantage	5  IR II, S-I or MA
<a href="#">Prof. Frank Scharnowski</a> <a href="#">Cindy Lor</a> MScDepartment for Basic Psychological Research and Research Methods			
<b>Real-time fMRI Neurofeedback</b>	We will conduct multiple studies investigating the ability to regulate emotional states using real-time fMRI neurofeedback in both healthy individuals and psychiatric patient populations. This method consists of using brain computer interfaces that provide feedback of neural states using brain imaging.	Independent learners, highly motivated, long-term career aspirations in neuroscience.	5  IR II, S-I or MA
<a href="#">Prof. Frank Scharnowski</a> <a href="#">Andrew Nicholson</a> , PhD Department for Basic Psychological Research and Research Methods			

<b>Machine-learning with psychological data</b>	<p>Generally, machine-learning techniques are powerful tools for data analysis. Particularly in psychology, where heterogeneous, multimodal data are ubiquitous. We offer the chance to dive into this hot topic and to gain hands-on experience with real world machine-learning applications.</p>	<p>basic programming skills (e.g. MATLAB, Python); enjoying programming</p>	<p>2</p>	<p>S-I or MA</p>
<p><a href="#">Prof. Frank Scharnowski</a> <a href="#">David Steyrl</a>, PhD Department for Basic Psychological Research and Research Methods</p>	<p>We are looking for a motivated student interested in a Master's project in Behavioural Biology and Cognition using a social cichlid (<i>Neolamprologus pulcher</i>) from Lake Tanganyika. The thesis will be part of the WWTF funded project: "Coping with change: Investigating the relationships between behavioural flexibility, stress and early environment". Problem solving is a major challenge for animals especially under rapidly changing environments. How much individuals are able to cope with changing conditions will be determined by their personality and life history. In this project you will investigate the understudied link between individual characteristics and problem solving abilities using targeted behavioural experiments. The work will be based at the Konrad Lorenz Institute for Ethology which is located on Wilhelminenberg in the 16th district.</p>	<p>We are particularly interested in a student with a keen interest in scientific questions, that would like to research fish behaviour and cognition, is able to work independently and in a team. Our daily communications are in English and the student is required to have good knowledge of English and, preferably, the thesis should be written in English.</p>	<p>2</p>	<p>MA</p>