Curriculum Vitae

Andreea Oliviana Diaconescu

February 2021

Résumé

Name:	Andreea Oliviana Diaconescu
Date of birth:	26-10-1982
Place of birth:	Craiova (Romania)
Nationality:	Romanian/Canadian
Marital Status:	Married
Children:	1 (Emil Simion Kasper, born 02-05-2017)
E-mail: Website:	andreea.diaconescu@camh.ca https://cognemo.com
Current position:	Independent Scientist Krembil Centre for Neuroinformatics Centre for Addiction and Mental Health Assistant Professor Department of Psychiatry, University of Toronto Associate Member Department of Psychology & Institute for Medical Science, University of Toronto
Business address:	250 College Street, Toronto ON M5T 1R8
Languages:	Romanian (native) English (fluent) French (advanced) German (advanced; level B2 Goethe Certification) Italian (oral comprehension)
Degrees:	PhD 2011 B.Sc. (first class with distinction) 2005
Selected Awards:	W. B. Templeton Thesis Award OHBM Awards: 2016, 2013, 2010, 2008, 2007
Publication record:	31 peer-reviewed articles total citation count: 1329 h-index: 16
Signature:	

EDUCATION & EMPLOYMENT

Junior Group Leader (equivalent to Assistant Professor) March 2017 – July 2019
Department of Psychiatry, University of Basel
Basel, Switzerland

Senior Research Fellow (PI: Prof. Klaas Enno Stephan) June 2013 – February 2017
Translational Neuromodelling Unit, University of Zurich & ETH Zurich
Zurich, Switzerland

Marie Curie Research Fellow (PI: Prof. Klaas Enno Stephan) June 2011 – June 2013
University of Zurich
Zurich, Switzerland

PhD Cognitive Neuroscience (PI: Prof. Anthony R. McIntosh) September 2006 – June 2011
Rotman Research Institute, University of Toronto,
Toronto, Canada

MA Psychology (PI: Prof. Anthony R. McIntosh & Shitij Kapur) June 2005 – September 2006
University of Toronto,
Toronto, Canada

BA Psychology with Honours (PI: Prof. Hugh R. Wilson) September 2001 – June 2005
York University
Toronto, Canada

FUNDING & AWARDS

Swiss National Foundation DOC.Mobility Awardee: Daniel Hauke, PhD Student CHF 50,000	January 2021- December 2021	Supervisor
Discovery Fund CAD 4'900'000	February, 2020 – January, 2025	Co-Investigator
Krembil Foundation CAD 650'000	September, 2019 – August, 2023	Principal Investigator
American Foundation for Suicide Prevention USD 100'000	June, 2020 – May, 2022	Co-Investigator
Novartis Foundation for Medical-Biological Research CHF 59'500	March 22nd, 2019	Awarded
Swiss National Foundation Ambizione Grant CHF 600,000	March 2017 – February 2020	Principal Investigator
Forschungskredit Universität Zürich Fellowship CHF 100,000	June 2013 – June 2014	Awarded
Graduate Research Council, University of Zurich CHF 10,000	February 2013	Awarded

European Union FP7 Marie Curie International Incoming Fellowship € 179,102	June 2011 – June 2013	Principal Investigator
Natural Sciences and Engineering Research Council Postdoctoral Fellowship declined	June 2012 – June 2014	Awarded
Natural Sciences and Engineering Research Council Graduate Scholarship (NSERC CGS D) CAD 100,000	October 2007 – October 2009	Awarded
Ontario Graduate Scholarship declined	May 2007 – May 2009	Awarded
Natural Sciences and Engineering Research Council Graduate Scholarship (NSERC PGS M) CAD 80,000	October 2005 – October 2007	Awarded
W. B. Templeton Thesis Award for Best Thesis (York University) CAD 1,000	October 2005	Awarded
Natural Sciences and Engineering Research Council Undergraduate Student Research Award CAD 8,000	May 2004 – May 2005	Awarded
Organization for Human Brain Mapping Travel Award USD 1,000	2016, 2013, 2010, 2008, 2007	Awarded

GRANTS UNDER REVIEW

NIH R21 Grant: Generative models combining Reward Associations and Social learning for Psychosis Prevention (GRASPP)	$175,000/$280,000	Principal Applicant
CIHR Project Grant: Computational assays for early treatment predictions in psychosis	CAD 425,000	Principal Applicant
NFRF Exploratory Grant: Deciphering Metacognition and Treatment Response in Depression With a Novel Digital Paradigm	CAD 250,000	Co-Principal Applicant
American Foundation for Suicide Prevention: The neurocomputational underpinnings of ketamine's rapid antisuicidal effects	USD 69,871/89,671	Principal Applicant
NIH R21 Grant: Computational models of behavior for suicide prevention	USD 275,000	Co-Principal Applicant
Brain Canada Foundation Grant: Neurocomputational assays for predicting suicidality in major depression	CAD 100,000	Principal Applicant

MAIN AREAS OF RESEARCH AND EXPERTISE

Neurocomputational Models of Suicidality

- Aim: establish, validate, and apply mathematical models that infer subject-specific mechanisms of brain disease from non-invasive measures of behaviour and neuronal activity during tasks that assess suicidal ideation and behaviour.
- Active inference, dynamic causal modelling, and Bayesian model comparison methods
- Analysis pipeline design for reproducible research
- Neuronal models of effective connectivity and perturbations via NMDAR antagonism (ketamine)

Neurocomputational Models of Psychosis

- Aim: establish, validate, and apply mathematical models that infer subject-specific mechanisms of brain disease from non-invasive measures of behaviour and neuronal activity during tasks that probe specific psychiatric symptomatology, such as persecutory delusions.
- Computational models of persecutory ideation for early detection of psychosis and treatment response prediction in first-episode psychosis patients
- Generative embedding and machine learning for clinical predictions
- Analysis pipeline design for reproducible research
- Neuronal models of effective connectivity and perturbations via dopamine and NMDAR antagonism
- Validate models of aberrant learning in psychosis using pharmacological manipulations and EEG/fMRI recordings

Computational Models of Learning and Decision-Making

- Aim: establish, validate, and apply mathematical models that infer subject-specific learning mechanisms from behaviour data focusing on specific syndromes.
- Computational models of learning in schizoaffective disorders: schizotypy and schizophrenia
- Computational models of aberrant learning and decision-making in subtypes of psychopathy, bordeline personality disorder, and autism

Hierarchical Bayesian Modelling

- Hierarchical Bayesian models of intentionality inference: validation and application
- Optimization algorithms for Bayesian inference: Gaussian-Processes and Variational Bayes
- Neuronal models of effective connectivity for electrophysiological data
- Model-based EEG and fMRI single-trial analysis methods
- Dynamic causal models for fMRI data

SUPERVISION

Ongoing: PhD Thesis

- "A neurocomputational account for persecutory delusions and its clinical utility for psychosis"
  Daniel J. Hauke
  University of Basel, Basel, Switzerland
  01 September 2017 – ongoing

Graduated Students

"**Investigating social cognition in schizotypy samples – a multidisciplinary approach**" *Petya Kozhuharova* University of Roehampton, London, UK	May 2018 – January 2021; Viva voce: 29 January 2021	PhD
"**Models of implicit social cue integration and their relevance for autism spectrum disorders**" (co-supervision) *Lara Henco* Clinic for Disorders of Social Interaction, Max Planck Institute of Psychiatry München	June 2016 –May 2020; Viva voce: 29 May 2020	PhD
"**Effective connectivity underlying hierarchical inference in social learning**" *Daniel J. Hauke* Faculty of Psychology and Neuroscience, Maastricht University, Netherlands	May 2015 – 26 July 2016; Viva voce: 26 July 2016	MSc
"**Arbitrating between advice and non-social information in a volatile world**" *Madeline Stecy* Biology, ETH Zürich, Switzerland	January 2015 – February 2016; Viva voce: 29 February 2016	MSc
"**Dopamine modulation of social learning and decision-making**" *Jessica de Faria Dafflon* Biomedical Engineering, ETH Zürich, Switzerland	February 2014 August 2015; Viva voce: 15 August 2015	MSc
"**Persecutory ideation and social inference in ultra-high risk psychosis**"	October 2017 – May 2020;	MA

Michelle Wobmann Clinical Psychology and Epidemiology, University of Basel, Switzerland	Viva voce: 1 May 2020	
"Models of perspective-taking: A window into persecutory delusions" *Katharina V. Wellstein* Social Psychology, Department of Psychology University of Zürich, Switzerland	January 2016 – March 2017; Viva voce: 10 March 2017	MA

PEER-REVIEWED PUBLICATIONS (by topic)

* refer to joint first author publications, underlined names indicate supervised students

Computational Psychiatry

Reiter, A. **Diaconescu, A. O.**, Eppinger, B., & Li , & Shu-Chen (2020). Human aging alters Bayesian social inference about others' changing intentions. *Neurobiology of Aging*, In Press.

Diaconescu, A. O. *, Wellstein, K. V. *, Kasper, L., Mathys, C., & Stephan, K. E. (2020). Hierarchical Bayesian models of social inference for probing persecutory delusional ideation. *Journal of Abnormal Psychology Special Issue "Predictive Coding and Psychopathology"*, 129(6): 556-569.
[*: joint first authors]

Cole, D. M. *, **Diaconescu, A. O.** *, Pfeiffer, U. J., Brodersen, K. A., Mathys, C. D., Julkowski, D., Ruhrmann, S., Schilbach, L., Tittgemeyer, M., Vogeley, K., & Stephan, K. E. (2020). Atypical processing of uncertainty in individuals at risk for psychosis. *Neuroimage Clinical*, 26:102239**.**
[*: joint first authors]

Henco, L. **Diaconescu, A. O.**, Lahnakoski, J., Brandi, M. L., Hoermann, S., Hennings, J., Hasan, A., Papazova, I., Strube, W., Bolis, D., Schilbach, L, & Mathys, C (2020). Differential mechanisms of social learning and information integration in Depression, Schizophrenia and Borderline Personality Disorder: a computational Bayesian approach. *PLoS Computational Biology*, 16(9): e1008162.

Kozhuharova, P., Saviola, F., **Diaconescu, A. O.**, & Allen, P. (2020) High schizotypy traits are associated with reduced hippocampal resting state functional connectivity. *Psychiatry Research: Neuroimaging*, In Press.

Wellstein, K. V. *, **Diaconescu, A. O.** *, Bischof, M., Rüesch Ranganadan, A., Paolini, G., Aponte, E., Ullrich, J., & Stephan, K. E. (2020). Inflexible social inference in individuals with subclinical persecutory delusional tendencies. *Schizophrenia Research*, 215: 344–351.
[*: joint first authors]

Sevgi, M. *, **Diaconescu, A.O.** *, Henco, L. Tittgemeyer, M., & Schilbach, L. (2019). Social Bayes: Using Bayesian modeling to study autistic trait-related differences in social cognition. *Biol. Psychiatry*, 87: 185–193.
[*: joint first authors]

Diaconescu, A. O., Hauke, D. J., & Borgwardt, S. (2019). Models of persecutory delusions: a mechanistic insight into the early stages of psychosis. *Molecular Psychiatry*, 1: 1-10.

Stephan, K.E., **Diaconescu, A.O.**, & Iglesias, S. (2016). Bayesian inference, dysconnectivity and neuromodulation in schizophrenia. *Brain*, 139 (7): 1874-1876.

Stephan, K.E., Iglesias, S., Heinzle, J., & **Diaconescu, A.O.** (2015). Translational Perspectives for Computational Neuroimaging. *Neuron*, 87(4): 716-32.

Diaconescu, A. O., Jensen, J., Wang, H., Willeit, M., Menon, M., Kapur, S., & McIntosh, A. R. (2011). Aberrant Effective Connectivity in Schizophrenia Patients during Appetitive Conditioning. *Frontiers in Human Neuroscience*, 4(239): 1-14.

Neuropharmacology/Brain Stimulation

Weber, L. A. E. *, **Diaconescu, A. O.** *, Mathys, C. D., Schmidt, A., Kometer, M., Vollenweider, F., & Stephan, K. S. (2020). Ketamine affects prediction errors about statistical regularities: A computational single-trial analysis of the auditory mismatch. *Journal of Neuroscience*, 40(29): 5658-5668.
[*: joint first authors]

Cook, J. L., Swart, J. C., Froböse, M. I., **Diaconescu, A. O.**, Geurts, D.E.M., den Ouden, H. & Cools, R. (2019). Catecholaminergic modulation of meta-learning. *eLife*, 8:e51439.

Schmidt, A.*, **Diaconescu, A. O. *,** Kometer, M., Friston, K. J., Stephan, K. E., & Vollenweider, F. X. (2013). Modeling Ketamine Effects on Synaptic Plasticity During the Mismatch Negativity. *Cerebral Cortex*. 23(10): 2394-2406.
[*: joint first authors]

Smith, G. S., Laxton, A. W., Tang-Wai, D. F., McAndrews, M. P., **Diaconescu, A. O.**, Workman, C. I., & Lozano, A. M. (2012). Increased cerebral metabolism after 1 year of deep brain stimulation in Alzheimer's disease. *Arch Neurology*, 69(9):1141-8.

Diaconescu, A. O., Kramer, E., Hermann, C., Ma, Y., Dhawan, V., Chaly, T., Eidelberg, D., et al. (2011). Distinct functional networks associated with improvement of affective symptoms and cognitive function during citalopram treatment in geriatric depression. *Human Brain Mapping*, *32*(10): 1677–1691.

Diaconescu, A. O., Menon, M., Jensen, J., Kapur, S., & McIntosh, A. R. (2010). Dopamine-induced changes in neural network patterns supporting aversive conditioning. *Brain Research*, 1313: 143–161.

Computational Neuroscience

Diaconescu, A. O. *, Stecy, M. *, Kasper, L., Burke, C. J., Nagy, Z., Mathys, C.., & Tobler, P. N. (2020). Neural arbitration between social and reward learning systems, *eLife*, 9, e54051.
[*: joint first authors]

Diaconescu, A.O., Mathys, C.D., Weber, L.A.E., Kasper, L., Mauer, J., Stephan, K.E. (2017). Hierarchical prediction errors in midbrain and septum during social learning. *Soc. Cogn. Affect. Neurosci.* 12 (4): 618-634.

Henson, L., Brandi, M. L., Lahnakoski, J., **Diaconescu, A. O.**, Mathys, C & Schilbach, L (2020). Bayesian modelling captures inter-individual differences in social belief computations in the putamen and insula. *Cortex*, In Press.

Lomakina E.l., Paliwal S., **Diaconescu A.O.**, Brodersen K.A., Aponte E.A., Buhmann J.M., & Stephan K.E. (2015). Inversion of Hierarchical Bayesian models using Gaussian processes. *Neuroimage*, 118: 133-145.

Diaconescu, A.O., Mathys, C., Weber, L.A.E., Daunizeau, J., Kasper, L., Lomakina, E.I., Fehr, E., & Stephan, K.E. (2014). Inferring on the Intentions of Others by Hierarchical Bayesian Learning. *PLoS Comput Biol 10*(9): e1003810.

Neuromodelling: Electrophysiology

McIntosh, A. R., Vakorin, V., Kovacevic, N., Wang, H., **Diaconescu, A. O.,** Protzner, A. (2013). Spatiotemporal dependency of age-related changes in brain signal variability. *Cerebral Cortex* 24(7):1806-17.

Diaconescu, A. O., Hasher, L., & McIntosh, A. R. (2012). Visual dominance and multisensory integration changes with age. *NeuroImage*, 65:152-166.

Diaconescu, A. O., Alain, C., & McIntosh, A. R. (2011b). The co-occurrence of multisensory facilitation and cross-modal conflict in the human brain. *Journal of Neurophysiology*, 106(6): 2896–2909.

Diaconescu, A. O., Alain, C., & McIntosh, A. R. (2011a). Modality-dependent "what" and "where" preparatory processes in auditory and visual systems. *Journal of Cognitive Neuroscience*, 23(7): 1609–1623.

Diaconescu, A. O., Kovacevic, N., & McIntosh, A. R. (2008). Modality-independent processes in cued motor preparation revealed by cortical potentials. *NeuroImage*, 42(3) : 1255–1265.

Methods and Applications

Rich, S., **Diaconescu, A. O.** *, Griffiths, J. * & Lankarany, M. * (2020). Ten simple rules for creating a brand-new virtual academic meeting (even amidst a pandemic). *PLoS Computational Biology*, In Press.
[*: joint last authors]

Bollmann, S. *, Kasper, L. *, Vannesjo, S. J., **Diaconescu, A. O.**, Dietrich, B. E., Gross, S., … Pruessmann, K. P. (2017). Analysis and correction of field fluctuations in fMRI data using field monitoring. *NeuroImage*, *154*, 92–105.
[*: joint first authors]

Kasper, L., Bollmann, S., **Diaconescu, A.O.**, Hutton, C., Heinzle, J., Iglesias, S., Hauser, T.U., Sebold, M., Manjaly, Z.-M., Pruessmann, K.P., Stephan, K.E. (2016). The PhysIO Toolbox for Modeling Physiological Noise in fMRI Data. *J. Neurosci. Methods*, 276: 56-72.

Wilson, H. R., & **Diaconescu, A. O.** (2006). Learning affects face space geometry. Vision Research, 46: 4143-4151.

TEXTBOOK CHAPTERS

Diaconescu, A.O., Iglesias, S., Stephan, K.E. (2020), Structural and functional neuroimaging of schizophrenia; in Geddes J.R., Andreasen N.C. and Goodwin G.M. (Eds). *The New Oxford Textbook of Psychiatry 3edn*. Oxford University Press, Oxford, UK. 10.1093/med/9780198713005.003.0060

MANUSCRIPTS UNDER REVIEW AND IN PREPARATION (by topic)

Computational Psychiatry

Kozhuharova, P., **Diaconescu, A. O.**, & Allen, P. (2020) Reduced cortical GABA and glutamate in high schizotypy. *Neuropsychopharmacology*, Under Revision.

Kozhuharova, P., Allen, P., & **Diaconescu, A. O.** (2020) High schizotypy associated with impaired learning under volatility in social context. *Schizophrenia Research* In Prep.

Diaconescu, A. O., Litvak, V., Mathys, C. D., Weber, L. A. E., Kasper, L., Friston, K. J., & Stephan, K. E. (2020). A computational hierarchy in human cortex. *eLife*, In Prep.

CONFERENCE ORGANIZATION

Canadian Computational Neuroscience Spotlight 2020,2021
https://www.crowdcast.io/e/CCNS/register
Toronto, Canada

International Brain Connectivity Workshop 2017
http://www.translationalneuromodeling.org/bcw/
Zurich, Switzerland

Statistical Parametric Mapping for Neuroimaging, University & ETH Zurich 2015, 2016
https://www.translationalneuromodeling.org/spm-course-2015/
https://www.translationalneuromodeling.org/spm-course-2016/
Zurich, Switzerland

Psychiatry under the lens of algorithms: First Zurich Computational Psychiatry Meeting, University of Zurich 2014
http://znznews.ch/events/
Zurich, Switzerland

TEACHING

Advanced Topics: Computational Neuroscience (JPB 1071H), University of Toronto, Canada	January-April 2021
Krembil Centre for Neuroinformatics Summer School, CAMH, Toronto, Canada https://kcnischool.org/	July 6-10 2020
Neuropsychiatry Colloquium, University of Basel – Department of Psychiatry, Basel Switzerland	2017-2019
Translational Neuromodelling in Psychiatry, University of Basel – Department of Psychology, Basel Switzerland	November, 2016 November, 2018

Computational Psychiatry Seminar, University of Zurich & ETH Zurich, Zurich Switzerland	2014-2017
Methods and Models for fMRI Data Analysis, University of Zurich & ETH Zurich, Zurich Switzerland	2014-2019
Translational Neuromodeling and Computational Psychiatry Seminar, University of Zurich & ETH Zurich, Zurich Switzerland	2012-2013
Statistical Parametric Mapping (SPM) for Neuroimaging, University of Zurich & ETH Zurich, Zurich Switzerland	2012-2016
Neural Basis of Behaviour, University of Toronto – Department of Psychology, Toronto Canada	2009-2010

INVITED TALKS/SYMPOSIA/PLENARIES

Diaconescu, A. O. (December 10th, 2021). Dynamic hierarchical Bayesian inference underpins human social learning. *Krembil Computational Neuroscience*, University Health Network, Toronto, Canada.

Diaconescu, A. O. (November 2nd, 2020). Computational models of persecutory delusions. *Institute of Psychiatry*, University Colllege London, London, UK.

Diaconescu, A. O. (October 21st, 2020). Dynamic hierarchical Bayesian inference underpins human social learning. *Department of Psychology and Neuroscience Program,* University of Guelph, Guelph, Ontario, Canada.

Diaconescu, A. O. (September 18th, 2020). Dynamic hierarchical Bayesian inference underpins human social learning. *Institute for Brain and Behavior Amsterdam (iBBA)*, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands.

Diaconescu, A. O. (August 26th, 2020). Computational assays of persecutory delusions. *VPH Institute: Building the Virtual Physiological Human*, Paris, France.

Diaconescu, A. O. (June 16th, 2020). GRASP: Generative models combining Reward Associations and Social learning for Prevention of Psychiatric Disease. *CCNS 2020*, Toronto, Canada.

Diaconescu, A. O. (October 29th, 2019). Dynamic hierarchical Bayesian inference underpins human social learning. *NeuroSpin*, Department of Cognitive Neuroscience, Paris, France.

Diaconescu, A. O. (October 24th, 2019). Translational Neuromodeling for Psychiatry: Psychosis. *Neuropsychiatry Colloquium*, Department of Psychiatry, University of Basel, Basel, Switzerland.

Diaconescu, A. O. (June 5th, 2019). The Role of Uncertainty in Psychiatric Disorders. *Neuropsychiatry Colloquium*, Department of Psychiatry, University of Basel, Basel, Switzerland.

Diaconescu, A. O. (April 2nd, 2019). Translational Neuromodelling for Psychiatry. *Chronobiology Seminar*, Department of Psychiatry, University of Basel, Basel, Switzerland.

Diaconescu, A. O. (October 24th, 2018). Computational Models of Persecutory Delusions. *Forschungstag*, Department of Psychiatry, University of Basel, Basel, Switzerland.

Diaconescu, A. O. (September 15th, 2016). A Neurocomputational Account of "Theory of Mind" and its Clinical Utility for Psychiatry. *ZNZ Symposium*, Zurich, Switzerland.

Diaconescu, A. O., Dafflon, J., Kasper, L., Mathys, C., Hess, M., & Stephan, K. E. (June 29th, 2016). The Role of Dopamine during Learning under Uncertainty. *22nd annual meeting of the Organization for Human Brain Mapping*, Geneva, Switzerland.

Diaconescu, A. O. (June 15th, 2016). Dynamic hierarchical Bayesian inference underpins human social learning. *Dresden University of Technology*, Dresden, Germany.

Diaconescu, A. O. (June 2nd, 2016). Social Inference and the Bayesian Brain. *Max Planck Institute for Psychiatry*, Munich, Germany.

Diaconescu, A. O. (April 19th, 2016). Dynamic hierarchical Bayesian inference underpins human social learning. *Bernstein Research Group "Valuation and Social Decision Making"*, Hamburg, Germany.

Diaconescu, A. O. (September 30th, 2015). Social Inference and the Bayesian Brain. *Cutting EEG (II) 2015: Cutting-edge methods for EEG research on cognition*, Berlin, Germany.

Diaconescu, A. O. (May 13th, 2015). Hierarchical learning and dopaminergic mechanisms in social inference. *Fifth International Symposium on Biology of Decision Making*, Paris, France.

Diaconescu, A. O. (November 17th, 2014). Hierarchical learning and dopaminergic mechanisms in social inference. *Radboud University*, Nijmegen, Netherlands.

Diaconescu, A. O. (November 13th, 2014). Inferring on the Intentions of Others by Hierarchical Bayesian Learning. *Georg-August-Universität Göttingen*, Göttingen, Germany.

Diaconescu, A. O. (October 17th, 2014). Theory of Mind Through the Lens of Algorithms. *TedxZürich*, Zürich, Switzerland.

Diaconescu, A. O. (October 3rd, 2014). Inferring on Hierarchical Regularities: A Computational Perspective, *INSERM Lyon*, Lyon, France.

Diaconescu, A. O. (July 31st, 2014). Social Inference Computations. *Berlin Einstein Symposium, Berlin School of Mind and of Mind and Brain*, Humboldt- Brain, Humboldt-Universität Universität zu Berlin, Berlin, Germany.

Diaconescu, A. O., Kasper, L., Raman, S. S., Mathys, C., Weber, L. A. E, & Stephan, K. E. (June 12, 2014). Connectivity among "Theory of Mind" Regions reflects Social Inference Computations. *20th annual meeting of the Organization for Human Brain Mapping*, Hamburg, Germany.

Diaconescu, A. O. (May 19, 2014). Social learning under the lens of (neuro-) computational algorithms. *First Zurich Computational Psychiatry Meeting*, *University of Zurich*, Zürich, Switzerland.

Diaconescu, A. O. (March 6, 2014). Deciphering the best intentions: Individual variability in social inference under the lens of (neuro-) computational modeling, genetics and fMRI. *Emotion and Cognition Talk Series, Functional Neuroimaging Laboratory*, University College London, London, UK.

Diaconescu, A. O. (December 11, 2013). Theory of Mind. *ZURICH.MINDS*, Zürich, Switzerland.

Diaconescu, A. O., Mathys, C., Weber, L. A. E, & Stephan, K. E. (June 18, 2013). Model-based neurogenetic characterization of social information processing in an interactive game. *19th annual meeting of the Organization for Human Brain Mapping*. Seattle, USA.

Diaconescu, A. O., Jensen, J., Menon, M., Kapur, S. & McIntosh, A. R. (October 19, 2009). Distinct Functional Connectivity Patterns in Schizophrenia Patients during Appetitive Conditioning. *39th annual meeting of the Society for Neuroscience*. Chicago, Illinois, USA.

Diaconescu, A. O., Kapur, S. & McIntosh, A. R. (June 15, 2008). Dopamine-induced changes in neural network patterns supporting aversive conditioning. *14th annual meeting of the Organization for Human Brain Mapping*. Melbourne, Victoria, Australia.

Diaconescu, A. O., Kovacevic, N., & McIntosh, A. R. (October 15, 2006). Neural mechanisms of sensorimotor integration. *36th annual meeting of the Society for Neuroscience*. Atlanta, Georgia, USA.

POSTERS/ABSTRACTS

Diaconescu, A. O., Stecy, M., Kasper, L., Burke, C. J., Nagy, Z., Mathys, C. D., Stephan, K. E., & Tobler, P. N. (2019). Neural arbitration between social and reward learning systems. 19th annual *Computational and Systems Neuroscience (Cosyne) 2019*, Lisbon, Portugal.

Diaconescu, A. O., Dafflon, J., Kasper, L., Mathys, C., Hess, M., & Stephan, K. E. (June 28th, 2016). The Role of Dopamine during Learning under Uncertainty. *22nd annual meeting of the Organization for Human Brain Mapping*, Geneva, Switzerland.

Diaconescu, A. O., Mathys, C., Kasper, L., Weber, L. A. E., & Stephan, K. E. (June 28th, 2016). Signatures of Uncertainty in the Social Brain. *22nd annual meeting of the Organization for Human Brain Mapping*, Geneva, Switzerland.

Diaconescu, A. O., Litvak, V., Mathys, C., Friston, K. J., Tomiello, S., Wellstein, K., Paolini, G., Stephan, K. E. (July 18, 2015). Hierarchical inference and its temporal dynamics in social learning. *21st annual meeting of the Organization for Human Brain Mapping*. Honolulu, USA.

Diaconescu, A. O., Kasper, L., Dafflon, J., Engeli, E., Tomiello, S., Stephan, K. E. (July 17, 2015). Hierarchical learning and dopaminergic mechanisms in social inference. *21st annual meeting of the Organization for Human Brain Mapping*. Honolulu, USA.

Diaconescu, A. O., Kasper, L., Raman, S. S., Mathys, C., Weber, L. A. E, & Stephan, K. E. (September 3, 2014). Connectivity among "Theory of Mind" Regions reflects Social Inference Computations. *London Virtual Social Interaction Workshop*, London, UK.

Diaconescu, A. O., Lieder, F., Mathys, C. & Stephan, K. E. (June 11, 2014). Layers of Abstraction: Learning of Concurrent Local and Global Statistical Regularities. *20th annual meeting of the Organization for Human Brain Mapping*. Hamburg, Germany.

Diaconescu, A. O., Mathys, C., Weber, L. A. E, Kasper, L. & Stephan, K. E. (October 22, 2013). A Model-based quantification of social inference: Neural mechanisms and individual differences. *First International Computational Psychiatry Meeting*. Miami, USA.

Diaconescu, A. O., Mathys, C., Weber, L. A. E., Daunizeau, J., Fehr, E., & Stephan, K. E. (June 14, 2012). Inferring on the intentions of others: Models of reciprocal learning during an interactive game. *18th annual meeting of the Organization for Human Brain Mapping*. Beijing, China.

Diaconescu, A. O., Schmidt, A., Friston, K. J., Vollenweider, F. X., & Stephan, K. E. (June 13, 2012). S-ketamine-induced perturbation of bottom-up effective connectivity predicts cognitive impairment. *18th annual meeting of the Organization for Human Brain Mapping*. Beijing, China.

Diaconescu, A. O., Mathys, C., Weber, L. A. E., Daunizeau, J., Fehr, E., & Stephan, K. E. (May 29, 30, 2012). Inferring on the intentions of others: Models of reciprocal learning during an interactive game. *International Conference on Decision Making*. Ascona, Switzerland.

Diaconescu, A. O., Kovacevic, N., & McIntosh, A. R. (June 15, 2011). Age sculpts brain signal complexity in human auditory and visual systems. *17th annual meeting of the Organization for Human Brain Mapping*. Quebec City, Canada.

Diaconescu, A. O., Alain, C., Hasher, L., & McIntosh, A. R. (June 8, 2010). Neural correlates of multisensory facilitation and competition. *16th annual meeting of the Organization for Human Brain Mapping*. Barcelona, Spain.

Diaconescu, A. O., Wang, H., Jensen, J., Kapur, S. & McIntosh, A. R. & McIntosh, A. R. (June 7, 2010). Altered effective connectivity in schizophrenia during appetitive conditioning. *16th annual meeting of the Organization for Human Brain Mapping*. Barcelona, Spain.

Diaconescu, A. O., & McIntosh, A. R. (March 24, 2010). The Costs of Switching between "What" and "Where" Processing in Audition and Vision. *20th Annual Frontal Lobes Conference*. Toronto, Ontario, Canada.

Diaconescu, A. O., & McIntosh, A. R. (June 19, 2009). Modality-dependent "what" and "where" preparatory task sets in auditory and visual systems. *15th annual meeting of the Organization for Human Brain Mapping*. San Francisco, California, USA.

Diaconescu, A. O., Kovacevic, N., & McIntosh, A. R. (June 12, 2007). Functional connectivity of spatiotemporal modes identified with ICA. *13th annual meeting of the Organization for Human Brain Mapping*. Chicago, Illinois, USA.

Diaconescu, A. O., Kovacevic, N., & McIntosh, A. R. (June 15, 2006). Modality-independent effects of cued motor preparation are revealed by cortical potentials. *12th annual meeting of the Organization for Human Brain Mapping*. Florence, Italy.

PROFESSIONAL EXPERTISE

- Statistical analysis packages (2005-present)
  - MATLAB, R
- Parallel computing for big data (> 500 participants):
  - Matlab Distributed Computing Engine
  - Son of Grid Engine ("Nash", "Arton": institutional clusters, about 200 cores)
  - Load Sharing Facility (university cluster "Brutus" and "Euler", about 20,000 cores)
- Computational modelling toolboxes (2011-present)
  - TAPAS (Translational Algorithms for Psychiatry-Advancing Science, https://translationalneuromodeling.github.io/tapas/)

        - As user for hierarchical behavioral modeling (HGF) and contributor for physiological noise modeling (PhysIO)
    - The Virtual Brain (http://www.thevirtualbrain.org/tvb/)
- Neuroimaging analysis packages (2008-present)
    - SPM (Statistical Parametric Mapping): preprocessing and analysis of PET, structural and functional MRI, EEG, MEG data
    - PLS (Partial Least Squares): multivariate statistical analysis package for PET, fMRI, EEG and MEG data
    - EEGLAB, LORETA, BESA

PROFESSIONAL ASSOCIATION

Society for Neuroscience 2006-present
https://www.sfn.org/

Organization for Human Brain Mapping 2006-present
https://www.humanbrainmapping.org

WORLD.Minds 2013-present
https://www.worldminds.com/home/

Canadian Association for Neuroscience 2019-present
https://can-acn.org/

INTERNATIONAL COLLABORATIONS

Radboud University Nijmegen, The Netherlands (PI: Dr. Inti Brazil) - Role: Co-Principal Investigator - In-depth/constructive exchanges on approaches, methods or results	2016-present	Computational psychiatry: Psychopathy
University College London, London UK (Co-PI: Dr. Vladimir Litvak) - Role: Principal Investigator - Analysis pipeline design, model-based EEG	2014-present	Neuromodelling EEG
Anna Freud Centre and University of College London, London UK (PI: Dr. Tobias Nolte) - Role: Co-Principal Investigator - Modelling aberrant social learning	2014-present	Computational psychiatry: Bordeline Personality Disorder
University of Roehampton, London, UK (PI: Dr. Paul Allen) - Role: Co-supervisor - In-depth/constructive exchanges on modelling aberrant learning in schizophrenia - PhD student supervision	2018-present	Computational psychiatry: Schizotypy
University of Birmingham, Birmingham, UK (PI: Dr. Jennifer Cook) - Role: Co-Principal Investigator - In-depth/constructive exchanges on reinforcement learning and neuropsychopharmacology	2013-2019	Neuropharmacology: Dopamine and serotonin interactions
Clinic for Disorders of Social Interaction, Max Planck Institute of Psychiatry, Munich, Germany (PI: Dr. Leo Schilbach)	2014-present	Computational psychiatry: Autism

- Role: Co-supervisor
- In-depth/constructive exchanges on modelling aberrant learning
- PhD student co-supervision

Technische Universität Dresden and Max Planck Institute for Human Development, Dresden, Germany (PI: Shu-Chen Li) - Role: Co-Principal Investigator - In-depth/constructive exchanges on modelling social learning in aging - Postdoctoral fellow co-supervision	2015-2019	Computational psychiatry: Aging
Translational Neuromodeling Unit, Institute for Biomedical Engineering, University of Zurich & ETH (PI: Klaas Enno Stephan) - Role: Co-Supervisor - In-depth/constructive exchanges on modelling social learning - Master student supervision	2017-present	Neuromodelling: EEG and fMRI
Interacting Minds Centre, Aarhus University, Aarhus, Denmark (PI: Christoph Mathys) - Role: Co-Principal Investigator - in-depth/constructive exchanges on hierarchical Bayesian modelling - PhD student co-supervision	2018-present	Hierarchical Bayesian Models

Manuscript Reviewing Activities for Scientific Journals (2018 Impact Factor):

▪ Trends in Cognitive Sciences (TICS) [1]	15.40
▪ Biological Psychiatry [5]	11.50
▪ Neuroscience and Biobehavioral Reviews [2]	8.02
▪ Neuropsychopharmacology [2]	7.16
▪ Cerebral Cortex [3]	6.30
▪ NeuroImage [4]	5.42
▪ Translational Psychiatry [2]	5.18
▪ Human Brain Mapping [3]	4.92
▪ PLoS Computational Biology [2]	4.42
▪ Scientific Reports [3]	4.01
▪ NeuroImage Clinical [2]	3.86
▪ Journal of Cognitive Neuroscience [2]	3.02
▪ PLoS One [3]	2.72

KNOWLEDGE TRANSLATION

Television and Other Video Outlets

1. Diaconescu, A. O. *Theory of Mind Through the Lens of Algorithms*. TedxZürich, Zürich, Switzerland.	October 17th, 2014
2. Diaconescu, A. O. *Theory of Mind*. ZURICH.MINDS, Zürich, Switzerland.	December 11, 2013

Extenuating Circumstances

Maternity Leave	May 2017-January 2018

Volunteer Work / Mentorship / Language Proficiency

- **Volunteer Work** 2003-2005

  Psychosocial Recreational Program Facilitator

  Centre for Addiction and Mental Health (1001 Queen St. West, Toronto, Ontario, Canada)

- **NIA Martial Arts Teaching** 2002-present