

Lei Zhang | 张磊

PERSONAL DETAILS

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EMPLOYMENT

2019 – present **Postdoctoral Researcher**
Social, Cognitive and Affective Neuroscience Unit (SCAN-Unit), University of Vienna (UNIVIE), Vienna, Austria

2019 – present **Adjunct Researcher**
Department of Psychology, University of Tromsø (UiT), Tromsø, Norway

2019 – present **Guest Lecturer**
Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany

2018 **Postdoctoral Researcher**
Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany

2016 – 2017 **Roche intern for Scientific Exchange (RiSE)**
Neuroscience, Ophthalmology and Rare Diseases (NORD), F. Hoffmann-La Roche AG, Basel, Switzerland

2016 – 2017 **Predoctoral Researcher**
Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany

2012 – 2013 **Predoctoral Researcher**
Basque Center on Cognition, Brain and Language (BCBL), San Sebastián, Spain

EDUCATION

2013 – 2018 **Ph.D. Cognitive Neuroscience (Dr. rer. biol. hum.), *summa cum laude***
University of Hamburg, Hamburg, Germany; Supervisor: Jan Gläscher

2012 – 2013 **M.Sc. Cognitive Neuroscience**
University of the Basque Country, San Sebastián, Spain

2007 – 2011 **B.Sc. Psychology**
Beijing Normal University, Beijing, China

FELLOWSHIPS, HONORS AND AWARDS

2019 Chinese government award for outstanding dissertation abroad (\$ 6,000)

2019 Fellow of Kavli Summer Institute in Cognitive Neuroscience, Santa Barbara, CA, USA

2018 Fellow of Advanced Scientific Programming in Python, G-Node. Camerino, Italy.

2014 Fellow of European Summer School on “Computational Modeling of Cognition with Applications to Society”. Laufen, Germany.

2014 Fellow of HBP Training School, Human Brain Project (HBP). Alpbach, Austria.

2010 National Scholarship for Undergraduate Students (\$1,000), China

FUNDINGS

2019	Researchers Career Grants (€ 2,300), FFG (Austrian Research Promotion), Austria
2018	Independent Postdoc Fellowship (€ 56,000), UKE, Germany
2013 – 2016	Graduate Fellowship (€ 43,000), DFG (German Research Foundation), Germany
2012 – 2013	Graduate Fellowship (€ 16,000), BCBL, Spain
2009 – 2011	National Innovation Experiment Program (€ 1,400), China
2009 – 2010	BNU Undergraduate Research Fund (€ 250), China

TEACHING

since 2020	Advanced Data Analysis Theory and empirical research (Mind and Brain track; master's level; 8 ETCS). UNIVIE, Vienna, Austria
2019 – 2020	Experimental Design and Statistics Introductory course for first-year PhD students. Max Planck School of Cognition. Leipzig, Germany
2019 – 2020	Biological Basis of Experience and Behavior: Decision Neuroscience Introductory seminar (bachelor's level; 6 ETCS). UNIVIE, Vienna, Austria
since 2019	Bayesian Statistics and Hierarchical Bayesian Modeling for Psychological Science (available on YouTube) Advanced seminar (master's level; 4 ETCS). UNIVIE, Vienna, Austria
2016 – 2020	Workshop on Bayesian statistics and Bayesian cognitive modeling 2019: Peking University, Beijing, China; Nanjing University, Nanjing, China; UNIVIE, Vienna, Austria; 2018: UiT, Tromsø, Norway; 2016–2020: UKE, Hamburg, Germany
2018	Workshop on Reinforcement learning: From theory to implementation UiT, Tromsø, Norway
2017	Tutorial on Modeling reinforcement learning and decision-making tasks with the hBayesDM package King's College London, London, UK
2014	Workshop on Intro2Matlab for psychologists Institute of Psychology, Chinese Academy of Science, Beijing, China

OUTREACH

2020	Communication & outreach of Neuromatch Academy
2019 – present	Curating the official Twitter account of SCAN-Unit
2019 – present	Podcast appearance at BrainCoffee & CallingFrom
2018 – present	Core member of the Chinese Open Science Network
2015 – 2017	Nacht des Wissens (Night of knowledge), UKE, Hamburg, Germany

PUBLICATIONS

* = Equal contribution

Preprints

Zhao, Y., Rütgen, M., **Zhang, L.**, & Lamm, C. (2020). Pharmacological fMRI provides evidence for

opioidergic modulation of discrimination of facial pain expressions. *PsyArXiv*. DOI:

[10.31234/osf.io/uj75y](https://doi.org/10.31234/osf.io/uj75y)

Crawley, D.*, **Zhang, L.***, Emily, J., ..., den Ouden, H., Loth, E., & the EU-AIMS LEAP group (2019).

Modeling cognitive flexibility in autism spectrum disorder and typical development reveals comparable developmental shifts in learning mechanisms. *PsyArXiv*. DOI:

[10.31234/osf.io/h7jcm](https://doi.org/10.31234/osf.io/h7jcm)

Zhou, L.*, **Zhang, L.***, Su, Y., & Liang, ZY. (2019). Is zero void? Attentional mechanism of hidden-

zero effect in risky decision-making. *PsyArXiv*. DOI: [10.31234/osf.io/pmhsa](https://doi.org/10.31234/osf.io/pmhsa)

Journal articles

Zhang, L., Gläscher, J. (2020). A brain network supporting social influences in human decision-

making. *Science Advances*, in press. DOI: [10.1101/551614](https://doi.org/10.1101/551614)

Zhang, L.*, Lengersdorff, L.*, Mikus, N., Gläscher, J., & Lamm, C. (2020). Using reinforcement

learning models in social neuroscience: frameworks, pitfalls, and suggestions of best practices. *Social cognitive and affective neuroscience*. DOI: 10.1093/scan/nsaa089

Botvinik-Nezer, R., Holzmeister, F., Camerer, C. F., ..., **Zhang, L.**, ..., Nichols T. E., Poldrack, R. A., Schonberg T. (2020). Variability in the analysis of a single neuroimaging dataset by many

teams. *Nature*, 582, 84-88. DOI: [10.1038/s41586-020-2314-9](https://doi.org/10.1038/s41586-020-2314-9)

Bayer, J., Rusch, T., **Zhang, L.**, Gläscher, J., & Sommer, T. (2020). Dose-dependent effects of

estrogen on prediction error related neural activity in the nucleus accumbens of healthy young women. *Psychopharmacology*, 237(3), 745-755. DOI: [10.1007/s00213-019-05409-7](https://doi.org/10.1007/s00213-019-05409-7)

Zhou, L., Li, AM., **Zhang, L.**, Li, S., & Liang, ZY. (2019). Similarity in processes of risky choice and

intertemporal choice: The case of certainty effect and immediacy effect. *Acta Psychologica Sinica*. 51(3), 337-352. DOI: [10.3724/SP.J.1041.2019.00337](https://doi.org/10.3724/SP.J.1041.2019.00337)

Zhang, L., Redžepović, S., Rose, M., & Gläscher, J. (2018). Zen and the Art of Making a Bayesian

Espresso. *Neuron*, 98(6), 1066-1068. DOI: [10.1016/j.neuron.2018.06.023](https://doi.org/10.1016/j.neuron.2018.06.023)

Hu, Y., He, L.*, **Zhang, L.***, Wölk, T., Dreher, J. C., & Weber, B. (2018). Spreading inequality: Neural

computations underlying paying-it-forward reciprocity. *Social cognitive and affective neuroscience*, 13(6), 578-589. DOI: [10.1093/scan/nsy040](https://doi.org/10.1093/scan/nsy040)

Ahn, W.-Y., Haines, N., & **Zhang, L.** (2017). Revealing neurocomputational mechanisms of

reinforcement learning and decision-making with the hBayesDM package. *Computational Psychiatry*, 1, 24-57. DOI: [10.1162/CPSY_a_00002](https://doi.org/10.1162/CPSY_a_00002)

Conference proceedings

Zhang, L., Kandil, F., Hilgetag, C.C., & Gläscher, J. (2019). The causal role of temporoparietal

junction in computing social influence in human decision-making. *Cognitive Computational Neuroscience (CCN 2019)*. Berlin, Germany. DOI: [10.32470/CCN.2019.1120-0](https://doi.org/10.32470/CCN.2019.1120-0)

Zhang, L., Martínez, A., & Salillas, E. (2014). Brain potentials reveal audiovisual integration in

bilinguals on arithmetic fact retrieval. *Proceedings of the 2014 IEEE International Conference on Multisensor Fusion and Information Integration for Intelligent Systems (MFI)*, pp. 1-6. DOI: [10.1109/MFI.2014.6997702](https://doi.org/10.1109/MFI.2014.6997702)

Books

Zheng, X., **Zhang, L.**, & Jiang, W. (2016). Health psychology. China Light Industry Press. Beijing,

China. [Book translation of Brannon, L., Feist, J., & Updegraff, J. (2013). Health psychology: An introduction to behavior and health. United States: Cengage Learning.]

ORGANIZATION OF CONFERENCES AND SYMPOSIA

- Committee chair 4th Chinese Association for Psychological & Brain Science (CAPBS) annual meeting. Vienna, Austria, 2021.
- Committee 1st Chinese Association for Psychological & Brain Science (CAPBS) NeuroChat online conference, 24 – 26, April 2020
3rd Chinese Association for Psychological & Brain Science (CAPBS) annual meeting. Utrecht, the Netherlands, 16 – 17, November 2019.
- Symposium chair “What do you desire? Multiple facets of motivation in social decision-making”, 5th international conference of the European Society for Cognitive and Affective Neuroscience (ESCAN), Budapest, Hungary, 23 – 26, June 2021.

CONFERENCE PRESENTATIONS (SELECTED)

- Zhang, L.**, Hartmann, H., Rütgen, R., & Lamm, C. (2021). Representational patterns in human visual cortex and their representational connectivity during empathic responses to picture-based pain. *Poster to be presented at International Association for the Study of Pain (IASP) World Congress on Pain*. Amsterdam, the Netherlands.
- Zhang, L.**, Gläscher, J. (2020). Neurocomputational mechanisms of social influence in goal-directed learning. *Talk presented at Neuromatch 2020 (neuromatch.io)*.
- Zhang, L.**, Kandil, F., Hilgetag, C.C., & Gläscher, J. (2019). The causal role of temporoparietal junction in computing social influence in human decision-making. *Poster presented at Symposium on "Biology of Decision Making (SBDM)*. Oxford, UK.
- Crawley, D.*, **Zhang, L.***, Emily, J., ..., den Ouden, H., Loth, E., & the EU-AIMS LEAP group (2019). Modeling cognitive flexibility in autism spectrum disorder and typical development reveals comparable developmental shifts in learning mechanisms. ***Co-first authors.** *Poster presented at Roche Joint RPF/RiSE Symposium*. Basel, Switzerland.
- Zhang, L.**, Gläscher, J. (2018). Neurocomputational mechanisms of social influence in goal-directed learning. *Poster (poster spotlight) presented at FENS Spring Brain Conference: Computational Neuroscience of Prediction*. Rungstedgaard, Denmark.
- Zhang, L.**, Hipp, J., Taylor, K., Chatham, C., & Bolognani, F. (2017). Age-binned normalization of Vineland™-II increases variability in standard scores: Implications for clinical trials in Autism Spectrum Disorder (ASD). *Poster presented at The International Meeting for Autism Research (IMFAR)*, San Francisco, CA, USA.
- Zhou, L.*, **Zhang, L.***, & Liang, Z.-Y. (2016). Comparing the underlying process between intertemporal choice and risky choice. *Talk presented at the 35th Annual Meeting of the European Group of Process Tracing Studies (EGPROC)*, Bonn, Germany. ***Co-first authors.**
- Zhang, L.**, Gläscher, J. (2015). Modeling social influence on human decision-making with reinforcement learning theory: A Bayesian perspective. *Poster presented at the Society for Neuroscience Annual meeting (SfN 2015)*, Chicago, IL, USA.
- Zhang, L.**, Gläscher, J. (2014). Reinforcement learning signals of social influence on human decision-making. *Poster presented at the Bernstein Conference 2014*, Göttingen, Germany.
- Zhang, L.**, Martínez, A., & Salillas, E. (2014). The role of finger-based number representations in online arithmetic facts retrieval. *Poster presented at the 20th Annual Meeting of the Organization for Human Brain Mapping (OHBM)*, Hamburg, Germany.

INVITED TALKS

08 / 2020	Institute of Science and Technology for Brain-Inspired Intelligence (ISTBI), Fudan University, China (virtual)
05 / 2020	Chinese Open Science Network talk series (virtual)
04 / 2020	Neurochat 2020 Chinese Association for Psychological & Brain Science (virtual)
01 / 2020	Cognition Academy, Max Planck School of Cognition, Berlin, Germany
11 / 2019	OnNeuro webinar, Ohio State University, OH, USA (virtual)
10 / 2019	Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany
09 / 2019	Decision Neuroscience Lab (PI: Sebastian Gluth), University of Basel, Switzerland
05 / 2018	Neuroeconomics Lab (PI: Jean-Claude Dreher), CNRS, Lyon, France
08 / 2017	Loth Lab (PI: Eva Loth), King's College London, London, UK
06 / 2017	Roche NORD Research Forum, Basel, Switzerland
06 / 2016	Internal seminar at UKE, Hamburg, Germany
08 / 2015	International Workshop on the Neurobiology of Social Influence Moscow, Russia

PROFESSIONAL AFFILIATIONS AND MEMBERSHIPS

2018 – 2022	The European Society for Cognitive and Affective Neuroscience (ESCAN)
2014 – 2017	Bernstein Association for Computational Neuroscience
2015	Society for Neuroscience (SfN)
2014	Organization for Human Brain Mapping (OHBM)
2013	Society for the Neurobiology of Language (SNL)

REVIEWER ACTIVITY

Review editor	Frontiers in Psychology
Ad-hoc Reviewer	Biological Psychology; Frontiers in Psychiatry; Journal of Mathematical Psychology; PLOS ONE; Scientific Reports; Social, Cognitive and Affective Neuroscience
Co-reviewer	Journal of Neuroscience; Nature Communications; NeuroImage; Proceedings of the National Academy of Sciences
Conference Reviewer	Cognitive Computational Neuroscience (CCN) 2019; Chinese Association for Psychological & Brain Science (CAPBS) 2019

TECHNICAL SKILLS

Programming	R, Matlab, Python, Stan, JAGS, and Shell scripting
Software Skills	hBayesDM, SPM, FSL, Cogent, Psychophysics Toolbox, Microsoft Certified Application Specialist (MCAS) in Microsoft Word 2007, Google Power Searcher, Windows OS, Linux OS, and Mac OS