

Di Fu, Ph.D.

PERSONAL INFORMATION

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Google scholar: <https://scholar.google.com/citations?user=AUqLvalAAAAJ&hl=zh-CN>
 (citation = 197, h-index = 6, i10-index = 4)

ACADEMIC EMPLOYMENT

2020-present Post-doctoral fellow, Department of Informatics, University of Hamburg (UHH), Hamburg, Germany (Advisor: Prof. Dr. Stefan Wermter)

2017-2020 Research assistant in Stefan Wermter's laboratory, University of Hamburg, Hamburg, Germany

2014-2017 Research assistant in Xun Liu's laboratory, Institute of Psychology, Chinese Academy of Sciences (CAS), Beijing, China

RESEARCH INTERESTS

1. Cognitive simulations of human behaviors, Social Interaction, Human-Robot/AI interaction, and social robotics (major)
2. Audiovisual crossmodal spatial attention and social attention (major)
3. Developmental neurobiology of executive control across childhood and adolescence (minor)
4. Social decision-making and pain empathy (minor)

EDUCATION

2017-2020 **Joint Ph.D.**, Human-Robot Interaction, Department of Informatics, University of Hamburg, Hamburg, Germany (Supervisor: Prof. Dr. Stefan Wermter)

2014-2020 **Ph.D.**, Cognitive Neuroscience, Institute of Psychology, Chinese Academy of Sciences, Beijing, China (Supervisor: Prof. Dr. Xun Liu) (*Thesis: Interaction between Attentional Capture and Executive Control in Conflict Processing*)

2010-2014 **B.S.**, Psychology, School of Human Kinesiology, Beijing Sport University, Beijing, China (Supervisor: Prof. Dr. Liwei Zhang) (*Thesis: The impact of Resilience on Ego Depletion*)

2004-2010 Tianjin Yaohua High School and Middle School, Tianjin, China

TRAINING SCHOOLS, CERTIFICATES, AND COURSES

2022 **Kavli Summer Institute in Cognitive Neuroscience**

2022 **Bayesian Data Analysis Course - GSU 2022**, Department of Computer Science, Aalto University, Espoo, Finland (online)

- 2021 **Neuromatch Academy Summer School** on Deep Learning, interactive student (online) (*My blog in Chinese: <https://mp.weixin.qq.com/s/uz-VqALcLEU-T6j9fjyPBw>*)
- 2020 European Summer School on Eye Movements (ESSEM), Department of Psychology, University of Bonn, Germany (online)
- 2020 Cognitive Modeling Academy Hamburg (CMAH): **Hierarchical (Bayesian) modeling**, Institute of Systems Neuroscience, University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany
- 2019 Training: MEG data collection and analyses, Institute of Neurophysiology and Pathophysiology, University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany (Advisor: Dr. Guido Nolte)
- 2019 Course: A Practical Introduction to Eye Tracking, Humanities Lab, Lund University, Lund, Sweden
- 2018 **Course: Neural Networks**, Department of Informatics, University of Hamburg, Hamburg, Germany (Lecturer: Prof. Dr. Stefan Wermter)
- 2017 **Course: Bio-inspired AI**, Department of Informatics, University of Hamburg, Hamburg, Germany (Lecturer: Prof. Dr. Stefan Wermter)

FELLOWSHIPS, AWARDS, AND HONORS

- 2022 **Kavli Summer Institute in Cognitive Neuroscience fellowship**
- 2020 **International postdoctoral exchange fellowship program 2020** by the Office of China Postdoctoral Council (OCPC), **300,000 RMB** (*News coverage: http://www.psych.ac.cn/xwzx/zhxw/202007/t20200730_5648000.html*)
- 2020 **Excellent doctoral graduation student of Beijing**
- 2020 **Excellent graduation student of Chinese Academy of Sciences**
- 2019-2020 Reward (RWD) basic medical and clinical medicine Mingde Scholarship, **3,000 RMB**
- 2019-2020 **CAS-DAAD** (Deutscher Akademischer Austauschdienst) joint doctoral student fellowship
- 2019-2020 Merit student, Chinese Academy of Sciences
- 2018-2019 Merit student, Chinese Academy of Sciences
- 2017-2018 International doctoral student exchange fellowship program by China Scholarship Council (CSC) scholarship
- 2017-2018 Merit student, Chinese Academy of Sciences
- 2014-2015 Merit student, Chinese Academy of Sciences
- 2014 Graduate with the honor of being an exam-exempted Ph.D. candidate of CAS (GPA: 4.04/5, rank 2 in the department)
- 2013 Excellent student leader for working as the president of the Students' Union of School of Human Kinesiology, Beijing Sport University
- 2013 First class scholarship, Beijing Sport University, **1,500 RMB**
- 2012 National Academic Scholarship, Ministry of Education of P. R. China, **8,000 RMB**

2011 National Academic Scholarship, Ministry of Education of P. R. China,
8,000 RMB

PEER-REVIEWED JOURNAL ARTICLES (# denotes co-first authorship, * denotes senior/corresponding author)

1. **Fu, D.***, Abawi, F., Carneiro, H., Kerzel, M., Chen, Z., Strahl, E., Liu, X.*, Wermter, S. (2023). A trained humanoid robot can perform human-like crossmodal social attention and conflict resolution. *International Journal of Social Robotics*. <https://link.springer.com/content/pdf/10.1007/s12369-023-00993-3.pdf>. doi: 10.1007/s12369-023-00993-3 (Demo: <https://www.youtube.com/watch?v=bjiYEs1x-7E>) (**JIF Q1, 5-year IF = 4.797**)
2. Chen, Z., **Fu, D.***, Liu, X.* (2022). Better to misidentify than to miss: a review of occurrence mechanisms and applications of face pareidolia (in Chinese). *Advances in Psychological Science*.
3. Qi, Y., Yang, G., **Fu, D.**, Li, Z., Liu, X.* (2021). Developmental neuroscience of cognitive control: the future path and layout (in Chinese). *SCIENTIA SINICA Vitae*. 51, 1-13. doi: 10.1360/SSV-2020-0248
4. Dai, B.#, **Fu, D.#**, Meng, G., Liu, B., Li, Q.* and Liu, X. (2020). The effects of governmental and individual predictors on COVID-19 protective behaviors in China: a path analysis model. *Public Administration Review*. doi:10.1111/puar.13236. (**JIF Q1, 5-year IF = 9.079**) (**ESI Top 1% highly cited paper**. News coverage: http://www.psych.ac.cn/xwzx/kviz/202006/t20200622_5609904.html)
5. **Fu, D.**, Weber, C., Yang, G., Kerzel, M., Nan, W., Barros, P., Wu, H., Liu, X.*, & Wermter, S. (2020). What can computational models learn from human selective attention? A review from an audiovisual unimodal and crossmodal perspective. *Frontiers in Integrative Neuroscience*. 14: 10. doi: 10.3389/fnint.2020.00010 (**JIF Q3, 5-year IF = 3.176**)
6. Andriella, A.#, Siqueira, H.#, **Fu, D.**, Barros, P., Magg, S., Wermter, S., Torras, Carme., & Aleny, Guillem. (2020). Do I Have a Personality? Endowing Care Robots with Context-Dependent Personality Traits. *International Journal of Social Robotics*. 1-22. doi: 10.1007/s12369-020-00690-5. (**JIF Q1, 5-year IF = 4.797**)
7. Yang, Z.#, **Fu, D.#**, Qi, Y., Zheng, Y., Li, Q.*, & Liu, X. (2019). Humor affects fairness considerations in the gain and loss contexts. *Frontiers in Psychology*. 9: 2679. doi: 10.3389/fpsyg.2018.02679. (**JIF Q2, 5-year IF = 3.618**)
8. **Fu, D.#**, Qi, Y.#, Wu, H.*, & Liu, X*. (2017). Integrative neurocognitive mechanism of empathy and counter-empathy (in Chinese). *Chinese Science Bulletin*. 62(22), 2500-2508. doi: 10.1360/N972016-01108.
9. Zamani, M. A., Magg, S., Weber, C., **Fu, D.**, & Wermter, S. (2018). Deep reinforcement learning using compositional representations for performing instructions. *Paladyn, Journal of Behavioral Robotics*, 9(1), 358-373. (**IF = 2.567**)

PEER-REVIEWED CONFERENCE PROCEEDINGS: (# denotes co-first authorship, * denotes corresponding/senior author)

1. **Fu, D.***, Abawi, F., & Wermter, S. (2023). The Robot in the Room: Influence of Robot Facial Expressions and Gaze on Human-Human-Robot Collaboration. <https://arxiv.org/pdf/2303.14285.pdf> (accepted by IEEE RO-MAN 2023)
2. Becker, D., Rueda, D.*, Beese, F., ..., **Fu, D.**, Strahl, E., Weber, T., Wermter, S. The Emotional Dilemma: Influence of a Human-like Robot on Trust and Cooperation. (accepted by IEEE RO-MAN 2023)
3. **Fu, D.#**, Abawi, F.#, Strahl, E., & Wermter, S. (2022). Judging by the look: The impact of robot gaze strategies on human cooperation. In IEEE International Conference on Robot and Human Interactive Communication (RO-MAN) Workshop on Machine Learning for HRI: Bridge the Gap between Action and Perception (Naples: IEEE).
4. **Fu, D.***, Barros, P., Parisi, G. I., Wu, H., Magg, S., Liu, X., & Wermter, S. (2018). Assessing the contribution of semantic congruency to multisensory integration and conflict resolution. In IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) Workshop on Crossmodal Learning for Intelligent Robotics (Madrid: IEEE).
5. Parisi, G. I., Barros, P., **Fu, D.**, Magg, S., Wu, H., Liu, X., & Wermter, S. (2018). A neurobotic experiment for crossmodal conflict resolution in complex environments. In 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (Madrid: IEEE), 2330-2335. (*Demo: <https://www.youtube.com/watch?v=bjiYEs1x-7E>*)
6. Barros, P., Parisi, G. I., **Fu, D.**, Liu, X., & Wermter, S. (2018). Expectation learning and crossmodal modulation with a deep adversarial network. In 2018 International Joint Conference on Neural Networks (IJCNN) (Rio de Janeiro: IEEE), 1-8.

UNDER PEER-REVIEWED JOURNAL ARTICLES AND CONFERENCE

PROCEEDINGS: (# denotes co-first authorship, * denotes corresponding/senior author)

1. Arora, N., **Fu, D.***, Abawi, F., & Wermter, S. (2023). Multi-Modal Representational Learning for Emotion Recognition in A Continuous Domain. (submitted to ACM ICMI 2023)
2. Abawi, F., Allgeuer, P., **Fu, D.**, & Wermter, S. (2023). Wrapyfi: A Wrapper for Message-Oriented and Robotics Middlewre. <https://arxiv.org/pdf/2302.09648.pdf> (submitted to IEEE IROS 2023)
3. **Fu, D.***, Abawi, F., Keiff, M., & Wermter, S. (2023). NaturalPlay: A crossmodal dataset of eye tracking and head movements in a human cooperation scenario. (in progress)
4. Chen, Z., Wen, M., **Fu, D.***, & Liu, X*. (2023). Similarities and differences in attentional shifts induced by face-like objects and averted gaze faces. <https://psyarxiv.com/5s2yn/> (submitted to Cognition, under review)
5. Abawi, F., **Fu, D.**, & Wermter, S. (2023). Social Attention Models for Personalized Scanpath Prediction and Robot Gaze Control. (in progress)
6. Cao, S., **Fu, D.**, Yang, X., Wermter, S., Liu, X.*, & Wu, H.* (2022). Can AI detect pain and express pain empathy? A review from emotion recognition and a human-centered

AI perspective? <https://arxiv.org/pdf/2110.04249.pdf> (submitted to Cognitive Systems Research, under review)

7. **Fu, D.#**, Ouyang, Y#, Yang, G., Meng, G., Wermter, S., Qi, Y.*, & Liu, X. (2022). Developmental disparities between stimulus-response and stimulus-stimulus conflicts processing during childhood, adolescence, and early adulthood. <https://psyarxiv.com/5hdxv/>
8. Yang, G., **Fu, D.**, Li, Z., Wu, H., Xu, H., Liu, X.* (2022). Independent multisensory integration and crossmodal attention processing: evidence from audiovisual gender congruency tasks. <https://osf.io/p9x2c>

CONFERENCE POSTERS: (# denotes co-first authorship, * denotes corresponding author)

1. **Fu, D.**, Li, Q.*, & Liu, X. Common and distinct neural substrates of subjective and objective fairness, Organization for Human Brain Mapping (OHBM), 2017, Vancouver, Canada
2. **Fu, D.#**, Qi, Y.#, Wan, W., Ran, B., Wu, H., & Liu, X. An fMRI meta-analysis support an integrative framework for empathy and counter-empathy, Organization for Human Brain Mapping (OHBM), 2017, Vancouver, Canada
3. Dong, H.#, **Fu, D.#**, Li, Z., Qi, Y., Liu, X., & Zuo, X.-N. Resting-state functional homogeneity changes after inhibition task predict conflict processing, Organization for Human Brain Mapping (OHBM), 2017, Vancouver, Canada
4. Wang, Y.#, **Fu, D.#**, Li, Z., Qi, Y., Liu, X., & Zuo, X.-N. Human inhibition cognitive component through rest and task performance: Dual-Regression, Organization for Human Brain Mapping (OHBM), 2017, Vancouver, Canada
5. **Fu, D.**, & Liu, X. Qufu Vision Science Conference (VSC), 2017, Shandong, China
6. **Fu, D.**, Zhang, T., Zhang, J., & Mao, Z. Development of the Resilience Scale for College Athletes, The International Society of Sport Psychology (ISSP), 2013, Beijing, China

RESEARCH DEMOS:

1. Who Just Said This, Robot? – A Trained Humanoid Robot Can Perform Human-Like Crossmodal Social Attention. **Fu, D.**, Abawi, F., Carneiro, H., Kerzel, M., Chen, Z., Strahl, E., Liu, X., Wermter, S. (2022). Link: <https://www.youtube.com/watch?v=bjiYEs1x-7E>
2. A Neurorobotic Experiment for Crossmodal Conflict Resolution in Complex Environments. Parisi, G. I., Barros, P., **Fu, D.**, Magg, S., Wu, H., Liu, X., & Wermter, S. (2018). Link: <https://www.youtube.com/watch?v=bjiYEs1x-7E>

RESEARCH GRANTS:

1. SFB TRR169 Crossmodal Learning: Adaptation, Predication, and Interaction (Second phase). National Natural Science Foundation of China (NSFC) and Deutsche Forschungsgemeinschaft (DFG), ¥1,200,000 (CAS) & €1,200,000 (UHH), 2020.01.01-2023.12.31, participate

2. SFB TRR169 Crossmodal Learning: Adaptation, Predication, and Interaction (First phase). NSFC and DFG, ¥1,200,000 (CAS) & €1,200,000 (UHH), 2016.01.01-2019.12.31, participate
3. Integrative Neurocognitive Mechanisms of Empathy and Counter-empathy. NSFC, ¥150,000, 2017.01.01-2017.12.31, participate
4. Neural Mechanisms of Impact of Social Comparison on Fairness Decision-making. NSFC, ¥630,000, 2016.01.01-2020.01.01, participate

INVITED TALKS AND SEMINARS

- 07/2023 “Crossmodal attention in Human-Robot Social Interaction”, Department of Industrial Engineering, Eindhoven University of Technology (job talk)
- 06/2023 “Modeling crossmodal attention in humanoid robots for HRI in complex social scenarios”, Department of Psychology, Zhejiang University (online)
- 06/2023 “Modeling crossmodal attention in humanoid robots for HRI in complex social scenarios”, Affective Intelligence and Robotics Laboratory (AFAR), University of Cambridge (online)
- 03/2023 “Computational Models of Selective Attention for Human-Robot Interaction”, SFB TRR 169 Crossmodal Learning winter semester webinar series (online)
- 10/2022 “Human-Robot Interaction: A trained humanoid robot can perform human-like crossmodal attention and social interaction”, Peking University (online)
- 09/2022 “Project A5: The impact of social attention between human and robot on human-human cooperation”, SFB TRR 169 Crossmodal Learning Autumn School, University of Hamburg (online)
- 09/2022 “Human-Robot Interaction: A trained humanoid robot can perform human-like crossmodal attention and social interaction”, Department of Industrial Engineering, Eindhoven University of Technology (online)
- 05/2022 Host “Career development workshop in Mandarin” for 2022 Organization for Human Brain Mapping (OHBM), sharing challenges and opportunities for early career researchers. Link: <https://youtu.be/z0K27AE9pVY>; <https://www.bilibili.com/video/BV16S4y1i7rH/> (online)
- 05/2022 “Human-Robot Interaction: A trained humanoid robot can perform human-like crossmodal attention and social interaction”, Nanjing University (online)
- 04/2022 “Human-Robot Interaction: A trained humanoid robot can perform human-like crossmodal attention and social interaction”, East China Normal University (online)
- 04/2022 “Human-Robot Interaction: Attention is all you need”, Institute of Automation, Chinese Academy of Sciences (online)
- 01/2022 “Human-Robot Interaction: A trained humanoid robot can perform human-like crossmodal attention and social interaction”, Zhejiang University (online)
- 11/2021 “Project A5: Neurobotic experiment for gaze-triggered crossmodal social attention using the GASP model”, SFB TRR 169 Crossmodal Learning Autumn School, University of Hamburg (online)
- 08/2021 “Human-Robot Interaction: Inspiration, exploration, and application of psychology in the field of robotics (updated)”, Young Scientists Forum, Institute of Psychology, Chinese Academy of Sciences (online)

- 04/2021 “Human-Robot Interaction: Inspiration, exploration, and application of psychology in the field of robotics”, University of Shanghai for Science and Technology (online)
- 03/2021 “Lessons I’ve learnt from my PhD”, Beijing Sport University & Hangzhou Normal University (online)
- 11/2020 “Project A5: “Neurobotic models for crossmodal joint attention and social interaction”, SFB TRR 169 Crossmodal Learning Autumn School, University of Hamburg (online)
- 11/2020 “Human-Robot Interaction: The way to conduct interdisciplinary research”, Chinese German Association for Biology and Medicine (online)

TEACHING AND SUPERVISION

- 2023 Neuromatch Academy Summer School on Deep Learning, course project mentor for two projects**
- 2023 M.Sc. Thesis, topic: “Social attention prediction in a free-viewing eye tracking task”, M.Sc. student: Maximilian Keiff (UHH)**
- 2023 M.Sc. Thesis, topic: “Multimodal representational learning for dimensional emotion recognition”, M.Sc. student: Navneet Singh Arora (UHH)**
- 2023 Doctoral thesis, topic: “social attention mechanisms under face pareidolia process”, Ph.D. candidate: Ziwei Chen (CAS), co-supervision with Prof. Dr. Xun Liu**
- 2023 Neural Networks course seminar, topic: “Can ChatGPT be a good teacher?”. M.Sc. students: Henrik Nickelmann, Anna Tomko (UHH)
- 2022 Bio-inspired Artificial Intelligence, winter semester, MSc course ID: LV 64-454, lecture: Bio-inspired Attention**
- 2022 Neural Networks course seminar, topic: “Instance recognition based on multisensory object dataset OBJECTFOLDER 2.0”. M.Sc. students: Virginia Castens, Lennard Danielsen (UHH)
- 2022 Neural Networks course seminar, topic: “Multimodal gaze prediction based on human eye-tracking data”, M.Sc. students: Frederico Bormaan, Florian Vahl (UHH)
- 2021 Bio-inspired AI course seminar, topic: “Graph neural networks in neurological disorders prediction”, M.Sc. students: Klara Kemnitz, Matilde Coin (UHH)
- 2021 Neural Networks course seminar, topic: “Classifying autism spectrum disorder using fMRI data from ABIDE”, M.Sc. students: Sara Minguez Monedero, Pablo Robles de Zulueta (UHH)
- 2020 Bio-inspired AI course seminar, topic: “Few-shot Adaptive Gaze Estimation (FAZE)”, M.Sc. students: Navneet Singh Arora, Diana Rueda (UHH)
- 2020 Neural Networks course seminar, topic: “Communication reasoning through learning human gaze”, M.Sc. students: Harm Matthias Harms, TimPuhlfürß (UHH)
- 2019 Neural Networks course seminar, topic: “Neuroscience-inspired reinforcement learning”, M.Sc. students: Sandra Mattern, Stephanie Wrage (UHH)
- 2018 Neural Networks course seminar, topic: “Neuroscience-inspired reinforcement learning”, M.Sc. students: Danu Caus (UHH)

COMMUNITY SERVICE:

- 2020-present Committee member of Chinese Association for Psychological & Brain Sciences (CAPBS), website: <https://capbs.github.io/2020/>
- 2020-present Committee member of Chinese German Association for Biology and Medicine (CGABM), website: <https://cdgtm.wordpress.com/>

EDITORIAL REVIEW SERVICES:

- Ad-hoc reviewer PeerJ, International Journal of Social Robotics, Brain Structure and Function, IEEE International Conference on Development and Learning (ICDL), Frontiers in Psychology
- Reviewer CAPBS symposium

BLOG AND PODCASTS

- 2021 Blog, NMA Deep Learning: the right choice for deep learning beginners (in Chinese) <https://mp.weixin.qq.com/s/uz-VqALcLEU-T6j9fjyPBw>
- 2020 Podcast, Ep19: Would you like to have a robot as your partner? (in Chinese), <https://www.ximalaya.com/sound/361307662>
- 2020 Podcast, Ep15: Can music be used in therapy? (in Chinese), <https://www.ximalaya.com/sound/352536589>
- 2020 Podcast, Ep13: Family of Origin Issues (in Chinese), <https://www.ximalaya.com/sound/348041097>