

ZIRUI ZHANG

Email: Zirui.Zhang@glasgow.ac.uk | Phone: +44 7838952590 | Glasgow, UK

RESEARCH INTERESTS

Visual Neuroscience, Pain, Ultra-High-Field (7T) & Layer fMRI, Computational Modelling, Neural Mechanisms of Memory and Prediction

WORK EXPERIENCE

Postdoctoral Researcher | *School of Psychology & Neuroscience, University of Glasgow (Oct 2025 – Present)*

- Conduct high-resolution 7T and 3T fMRI research, leading end-to-end experimental design, data collection, and signal processing.
- Develop computational models to investigate cortical layer-specific feedback mechanisms in visual processing and pain perception.

3T-fMRI Support Specialist | *School of Psychology & Neuroscience, University of Glasgow (Mar 2026 – Present)*

- Direct daily operational logistics and technical support for 3T-fMRI scanning facilities, maximizing scanner uptime and protocol efficiency.
- Deliver safety inductions and operational certification training (CCNi certification) for researchers, postgraduates, and visiting academics.

EDUCATION

Ph.D. in Psychology and Neuroscience | *University of Glasgow, UK (2021 – 2025)*

- Thesis: Predictability and Familiarity Effects on Top-down Processing in Primary Visual Cortex (**Pass with No Corrections**)
- Supervisors: Prof. Lars F. Muckli & Dr. Lucy S. Petro

M.Sc. in Human-Centered Interactive Technology (Merit 2:1) | *University of York, UK (2020 – 2021)*

M.Sc. in Cognitive Neuroscience (Merit 2:1) | *University of York, UK (2019 – 2020)*

B.Sc. in Applied Psychology | *Liaocheng University, China (2016 – 2019)*

B.Sc. in Biological Engineering (Transferred) | *Liaocheng University, China (2015 – 2016)*

TECHNICAL SKILLS

- **Neuroimaging Hardware:** Certified Class A Operator for 7T fMRI (>100 scans as lead operator); 3T fMRI (>100 scans).
- **Neuroimaging Analysis:** Layer fMRI, SPM, FSL, BrainVoyager.
- **Programming & Computation:** Python, MATLAB, R, JavaScript, Computational Modelling, Machine Learning.
- **Statistical Tools:** R, SPSS.

PUBLICATIONS

- **Zhang, Z.***, Abbatecola, C.*, Paton, A. T., Levelt, C. N., Philips, W. A., Petro, L. S.#, & Muckli, L. F.# Context-sensitive neocortical activity that depends on both coherence and surprise. *Current Research in Neurobiology* (Under Review).

- **Zhang, Z.**, Abbatecola, C., Huang, Y., Lazarova, Y., Paton, A. T., Petro, L. S.#, & Muckli, L. F.# Investigating the effects of memory and learning on contextual feedback signals in layers of early visual cortex. *Manuscript in Preparation*.
- Abbatecola, C., Lazarova, Y., Petro, L. S., Grent-'t-Jong, T., Haining, K., Baldaque, J. M., **Zhang, Z.**, Huang, Y., De Martino, F., Krishnadas, R., Porter, D., Crabbe, F., Gumley, A., Dheerendra, P., Uhlhaas, P. J.#, & Muckli, L. F.# Attention-dependent modulation of auditory deviance processing in early psychosis: evidence from 7T fMRI. *Manuscript in Preparation*.
- Li, G., Guha, T., Onuoha, O., Qiu, Z., Grant, A., Feng, Z., **Zhang, Z.**, Pohlmann, K., McGill, M., Brewster, S., & Pollick, F. (2024). Detecting in-car VR motion sickness from lower face action units. *Proceedings of IEEE International Symposium on Mixed and Augmented Reality (ISMAR)*, 1019–1028.
- Montabes de la Cruz, B. M., Abbatecola, C., Luciani, R. S., Paton, A. T., Bergmann, J., Vetter, P., Petro, L. S., & Muckli, L. F. (2024). Decoding sound content in the early visual cortex of aphantasic participants. *Current Biology*, 34(21), 5083–5089. (Acknowledged for fMRI data collection support).

CONFERENCE PRESENTATIONS & INVITED TALKS

- **[Poster Presentation]** Z. Zhang, Y. Huang, C. Abbatecola, et al. "Vision Coil Increases Sensitivity in Occipital Regions and Allows for a Bigger Visual Field at 7T". OHBM 32nd Annual Meeting, Bordeaux, France (June 2026).
- **[Poster Presentation]** Z. Zhang, C. Abbatecola, A. Paton, Y. Lazarova, L.S. Petro, L.F. Muckli. "Investigating the effects of memory and learning on contextual feedback signals in layers of early visual cortex". Organization for Human Brain Mapping (OHBM), Brisbane, Australia (July 2025).
- **[Invited Talk]** Z. Zhang. "Pain meeting – A 7T fMRI Study". Invited talk at Pain Day, Glasgow, UK (Feb 2025).
- **[Poster Presentation]** Z. Zhang, C. Abbatecola, A. Paton, Y. Lazarova, L.S. Petro, L.F. Muckli. "Investigating the effects of memory and learning on contextual feedback signals in layers of early visual cortex". The European Conference on Visual Perception (ECPV), Aberdeen, UK (July 2024).
- **[Oral & Poster Presentation]** Z. Zhang, C. Abbatecola, L.S. Petro, L.F. Muckli. "Time-dependent contextual feedback signals increase V1 responses to unpredictable scene information". Organization for Human Brain Mapping (OHBM), Seoul, South Korea (June 2024).
- **[Poster Presentation]** Z. Zhang, C. Abbatecola, L.S. Petro, L.F. Muckli. "Investigating predictive cortical feedback processing for expected and surprising scene information". SINAPSE 15th Annual Scientific Meeting, Glasgow, UK (June 2023).

TEACHING, SERVICE & LEADERSHIP

- **Invited Speaker:** ICE Visit Event, University of Glasgow (Mar 2026): Delivered a 10-minute lightning talk on 7T fMRI research to MSc Precision Medicine and MSc Brain Sciences students.
- **Presenter & Facilitator:** CCNi Induction, University of Glasgow (Oct 2024): Introduced neuroimaging safety protocols and research practices to incoming Postgraduate Research (PGR) students.
- **Co-Organizer:** Philosophy, Psychology, and Neuroscience Research Seminars, University of Glasgow (2022 – 2025).
- **Undergraduates & Master's Student Supervisor:** School of Psychology & Neuroscience, University of Glasgow (2023 - 2026).
- **Teaching Assistant:** Liaocheng No. 4 Middle School (Mar 2018 – May 2018): Lectured, graded coursework, and mentored students in mental health education.

HONORS & AWARDS

SPN Pickford Funding, University of Glasgow (£1,200)	2026
SPN PhD Student Fund, University of Glasgow (£1,000)	2025
SPN PhD Student Fund, University of Glasgow (£1,000)	2024