

POLINA ARBUZOVA

PhD Candidate

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RESEARCH INTERESTS

Metacognition	<i>Awareness of sensorimotor processes</i>
Visual perception	<i>Perceptual awareness; top-down influences on vision; feature-based attention.</i>
Cognitive neuroscience	<i>Neural correlates of aware and unaware processes; motor control; embodied cognition; spatial cognition.</i>
Clinical neuroscience	<i>Perception, metacognition and (oculo)motor control in clinical populations; disorders of consciousness; anosognosia.</i>
Philosophy	<i>Theories of consciousness; sense of agency.</i>
Psychology of art	<i>Interindividual differences in visual art perception; psychology of music.</i>

EDUCATION

- 2018 – 2023 Humboldt-Universität zu Berlin, Germany
Berlin School of Mind and Brain
Bernstein Center for Computational Neuroscience Berlin
PhD at the Department of Psychology and at the Berlin School of Mind and Brain. Thesis (submitted): “Metacognition Across Different Modalities in Health and Disease”. PI: Dr. Elisa Filevich.
- 2015 – 2018 Freie Universität Berlin
MSc in Social, Cognitive and Affective Neuroscience
Thesis: “Neural representation of stimuli under continuous flash suppression in superior colliculus”. PI: Prof. Dr. Philipp Sterzer.
- 2011 – 2015 University of St Andrews, Scotland
BSc (Hons) in Neuroscience
Thesis: Does anxiety affect eye-movements during driving?
- 2008 – 2011 Riga Secondary School #40, Latvia
- 1999 – 2008 Riga Herder Secondary School, Latvia
- 1999 – 2007 Riga Juglas Music School

RESEARCH EXPERIENCE

- starting May 2023 Adaptive Systems Group, Humboldt-Universität zu Berlin, Germany — Postdoctoral Researcher
Project on computational model of metacognition for tool use and tool inventions in robots (within the MetaTool consortium). PI: Dr. Verena Hafner.
- Apr 2018 – Mar 2023 Filevich Lab, Humboldt-Universität zu Berlin / Bernstein Center for Computational Neuroscience Berlin, Germany — PhD Researcher
Project on metacognition of action in clinical and healthy populations. Development of the behavioural experiments, recruitment of the participants, analysis of the data and preparation of the manuscripts.
- Aug 2016 – Mar 2018 Sterzer Lab, Charité, Berlin, Germany — Intern & Master Student
Research internship and Master's thesis. Project on neural basis of eye-movements and visual awareness.
- Jul 2016 – Feb 2018 Rolfs Lab, Bernstein Center for Computational Neuroscience, Berlin, Germany — Student research assistant
Recruiting and testing study participants using various eye-trackers, helping with organizational tasks.
- Aug – Sep 2017 Park Lab, Universität zu Lübeck, Berlin, Germany — Student research assistant
Recruiting study participants for an fMRI and eye-tracking study.
- Jun 2014 – Jul 2014 Rolfs Lab, Bernstein Center for Computational Neuroscience, Berlin, Germany — Intern
Research internship under the DAAD RISE program. Project on feature-based attention and visual memory, supervised by a PhD student Z. Kalogeropoulou. Training in Matlab, R and in using a stationary eye-tracker.
- Oct 2013 – Mar 2014 Harris Lab, University of St Andrews, Scotland — Intern
Volunteering with a PhD student A. MacKenzie on a project about vision, cognition and driving. Trained to use a head mounted video-based eye-tracker.

PUBLICATIONS

- Arbuzova, P.***, Maurer, L. K., & Filevich, E. (2022). Metacognitive domains are not aligned along a dimension of internal-external information source. *Psychonomic Bulletin & Review*, 1-11. [\[LINK\]](#)
- Arbuzova, P.***, Guo, S., Koß, C., Kurvits, L., Faivre, N., Kühn, A. A., ... & Ganos, C. (2022). No evidence of impaired visual and tactile metacognition in adults with Tourette disorder. *Parkinsonism & Related Disorders*. [\[LINK\]](#)
- Arbuzova, P.***, Peters, C., Roed, L., Koss, C., Maurer, H., Maurer, L. K., Mueller, H., Verrel, J., & Filevich, E. (2020). Measuring Metacognition of Direct and Indirect Parameters of Voluntary Movement. *Journal of Experimental Psychology: General*. [\[LINK\]](#)
- Rahnev, D., Adler, W. T., Aguilar-Lleyda, D., Akdoğan, B., **Arbuzova, P.***, Atlas, L. Y., ... Zylberberg, A. (2020). The confidence database. *Nature human behaviour*, 4(3), 317-325. [\[LINK\]](#)

CONFERENCES CONTRIBUTIONS

Talks

Arbuzova, P.*, Filevich, E. (2021) Influence of monitoring motor performance on metacognitive control of behaviour. *Association for Scientific Study of Consciousness conference (ASSC 24)*, online/Tel Aviv, Israel.

Posters

Arbuzova, P.*, Maurer, L.K., Filevich, E. (2002). Metacognitive domains do not group based on internal vs. external sources of information. *Association for Scientific Study of Consciousness conference (ASSC 25)*, Amsterdam, the Netherlands.

Arbuzova, P.*, Filevich, E. (2022). No evidence of impaired visual and tactile metacognition in adults with tourette disorder. *Mind, Brain, Body Symposium, MindBrainBody Institute*, online/Berlin, Germany.

Arbuzova, P.*, Filevich, E. (2021). Monitoring internal vs external information and domain-generalty question in metacognition. *Metacognition: New Developments and Challenges. Institute of Philosophy, UCL*, online/London, UK.

Arbuzova, P., Filevich, E. (2021). Relationship between metacognition of motor, visual and memory processes. *Mind, Brain, Body Symposium, MindBrainBody Institute*, online/Berlin, Germany.

Arbuzova, P., Filevich, E. (2019). The relationship between visual and motor metacognition depends on the demands of the first-order task. *Association for Scientific Study of Consciousness conference (ASSC 23)* 23, London, Ontario, Canada.

Arbuzova, P., Peters, C., Röd, L., Koß, C., Forster, C., Filevich, E. (2019). Measuring Motor Metacognition. *Mind, Brain, Body Symposium, MindBrainBody Institute*, Berlin, Germany.

PROFESSIONAL MEMBERSHIPS

since 2019 Association for Scientific Study of Consciousness

AWARDS AND HONOURS

Mar 2022 1st poster prize at the *MindBrainBody* symposium

Jun 2014 German Academic Exchange Service (DAAD) RISE Scholarship

COURSES AND WORKSHOPS

Jul 2022 Computations of Agency and Metacognition in Mental Health Workshop. *London, the UK/online*.

Jul 2022 Summer School "TwinBrain 2.0" – Neuroscience of Movement: Exploring Brain Dynamics in Parkinson's Disease and Related Disorders. *Piran, Slovenia*.

Feb 2020 Ethics and Neuroscience Winter School. *Berlin, Germany*.

Dec 2019 Metacognition and Freedom of Choice in Mental Illness Workshop. *Paris, France*.

- Sep 2019 Computational Psychiatry Course. Zürich, Switzerland.
- Sep 2018 Berlin | Oxford Summer School on Open, Transparent, and Reproducible Research in the Life Sciences. Berlin, Germany.

TEACHING EXPERIENCE

- Nov 2022 New York University Berlin, Germany
Guest lecture about perceptual awareness and metacognition in "Perception" course.
- Nov 2020 – Apr 2022 International Psychoanalytic University, Berlin, Germany
Developing and teaching a course for the "Empirical Practical" module for 2nd year Psychology BSc students and teaching a course "Scientific work, literature research and presenting" for 1st year Psychology BSc students.
- since Mar 2020 Dmitry Bulkin's School of Creative Art Photography
Guest lecturer teaching principles of visual perception in the context of photography.
- 2009 – 2016 ABFS 'Extracurricular Science School for Children' summer school, (summertime) Riga/Vecpiebalga, Latvia
Teaching natural sciences with an interdisciplinary approach to primary and junior secondary school children, and organising creative activities.
Summer 2015 – 2016: leading projects about human vision.

SCIENCE COMMUNICATION

- Apr 2022 "Can you raise your left eyebrow?" talk in the series "Berlin Brains" at the Urania Berlin. [[LINK](#)]
- since Oct 2021 "Scholar Minds — Podcast", Berlin, Germany
Developing a podcast about mental health. Technical team and the host.
- Feb – Sep 2016 Neuroscience blog 'SCAN Berlin', Freie Universität Berlin
Contributing to the content, editing and design. [[LINK](#)]
- Feb 2013 – May 2015 "The Maze", University of St Andrews, Scotland
Contributing to a student-run newsletter/magazine of the School of Psychology and Neuroscience. Reviews & Media content sub-editor since 2014. [[LINK](#)]

TECHNICAL SKILLS

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| Programming | Matlab, R, Python |
| Neuroimaging | MRI (Siemens 3T Trio), MRICron, SPM, TAPAS PhysIO |
| Eye-tracking | EyeLink 1000, EyeLink II, SMI iView-X MRI-LR, EyeLink DataViewer |

REFERENCE

Dr. Elisa Filevich

PI of the MetaMotorLab
Bernstein Center & Department of
Psychology | Humboldt University Berlin
Philippstr. 13, Haus 6
10115 Berlin, Germany
elisa.filevich@bccn-berlin.de

Prof. Dr. Martin Rolfs

PI of the Active Perception and Cognition Lab
Department of Psychology
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