

Aleya A. Marzuki, PhD

GitHub: <https://github.com/aleyaamarzuki>

EDUCATION

University of Cambridge, UK <i>PhD in Psychology, Passed with Minor Corrections</i>	2017 - 2021
Thesis Title: Neurocognitive Mechanisms of Learning and Decision-Making in Adolescent-OCD: A Computational Approach	
Supervisors: Professor Trevor Robbins and Professor Barbara Sahakian	
University College London, UK <i>BSc Psychology, 1st Class Honours</i>	2014 -2017

ACADEMIC RESEARCH POSITION

Guest Scientist, Max Planck Institute for Biological Cybernetics, Germany	2024 - present
Post-doctoral Research Fellow, University of Tübingen, Germany	2024 - present
Post-doctoral Research Fellow, Sunway University, Malaysia	2022 – 2023
Research Consultant, Nanyang Technological University, Singapore	2021 – 2022
Graduate Research Assistant, University of Cambridge, UK	2018 – 2020
Research Assistant, National University of Malaysia	2017

JOURNAL PUBLICATIONS

1. **Marzuki, A. A.**, Wong, K. Y., Chan, J. K., Na, S. Y., Thanaraju, A., Phon-Amnuaisuk, P., ... & Schaefer, A. (2024). Mapping computational cognitive profiles of aging to dissociable brain and sociodemographic factors. *npj Aging*, 10(1), 50.
2. **Marzuki, A. A.**, Banca, P., Garofalo, S., Degni, L. A., Dalbagno, D., Badioli, M., ... & Robbins, T. W. (2024). Compulsive avoidance in youths and adults with OCD: an aversive pavlovian-to-instrumental transfer study. *Translational Psychiatry*, 14(1), 308.
3. **Marzuki, A. A.**, & Lim, T. V. (2024). Bridging minds and policies: supporting early career researchers in translating computational psychiatry research. *Neuropsychopharmacology*, 1-2.
4. **Marzuki, A. A.**, Vaghi, M. M., Conway-Morris, A., Kaser, M., Sule, A., Apergis-Schoute, A., ... & Robbins, T. W. (2022). Atypical action updating in a dynamic environment associated with adolescent obsessive-compulsive disorder. *Journal of Child Psychology and Psychiatry*, 63(12), 1591-1601.
5. **Marzuki, A. A.**, Tomić, I., Ip, S. H. Y., Gottwald, J., Kanen, J. W., Kaser, M., ... & Robbins, T. W. (2021). Association of environmental uncertainty with altered decision-making and learning mechanisms in youths with obsessive-compulsive disorder. *JAMA network open*, 4(11), e2136195-e2136195.
6. **Marzuki, A. A.**, Pereira de Souza, A. M. F. L., Sahakian, B. J., & Robbins, T. W. (2020). Are candidate neurocognitive endophenotypes of OCD present in paediatric patients? A systematic review. *Neuroscience & Biobehavioral Reviews*, 108, 617-645.
7. Thanaraju, A., **Marzuki, A. A.**, Kei, C. J., Yung, W. K., Phon-Amnuaisuk, P., Vafa, S., ... & Jenkins, M. (2024). Structural and Functional Brain Correlates of Socioeconomic Status Across the Life Span: A Systematic Review. *Neuroscience & Biobehavioral Reviews*, 105716.
8. Chan, J. K., **Marzuki, A. A.**, Vafa, S., Thanaraju, A., Yap, J., Chan, X. W., ... & Schaefer, A. (2024). A systematic review on the relationship between socioeconomic conditions and emotional disorder symptoms during Covid-19: unearthing the potential role of economic concerns and financial strain. *BMC psychology*, 12(1), 237.

9. Banca, P., Ruiz, M. H., Gonzalez-Zalba, M. F., Biria, M., **Marzuki, A. A.**, Piercy, T., ... & Robbins, T. W. (2024). Action sequence learning, habits, and automaticity in obsessive-compulsive disorder. *Elife*, 12, RP87346.
10. Biria, M., Banca, P., Healy, M. P., Keser, E., Sawiak, S. J., Rodgers, C. T., **Marzuki, A. A.**, ... & Robbins, T. W. (2023). Cortical glutamate and GABA are related to compulsive behaviour in individuals with obsessive compulsive disorder and healthy controls. *Nature communications*, 14(1), 3324.
11. Biria, M., Banca, P., Keser, E., Healy, M. P., Sawiak, S. J., **Marzuki, A. A.**, ... & Robbins, T. W. (2023). Excessive Checking in Obsessive-Compulsive Disorder: Neurochemical Correlates Revealed by 7T Magnetic Resonance Spectroscopy. *Biological Psychiatry Global Open Science*.
12. Mushtaq, F., Welke, D., ... **Marzuki, A. A.**, ... & Valdes-Sosa, P. (2024). One hundred years of EEG for brain and behaviour research. *Nature Human Behaviour*, 1-7.
13. Biria, M., Banca, P., Barnham, I. J., **Marzuki, A. A.**, Segarra, N., Keser, E., ... & Robbins, T. W. (2025). Clozapine-induced obsessive-compulsive symptoms in schizophrenia: Clinical and cognitive determinants of dysfunctional checking. *Psychological Medicine*, 55, e87.
14. Vafa, S., Thanaraju, A., Chan, J. K., Harris, H. A., Chan, X. W., Todi, K., ... & **Marzuki, A. A.** (2025). The effectiveness of real-life cognitive and physical interventions on cognitive functioning in healthy older adults: A systematic review of the effects of education and training duration. *Applied Psychology: Health and Well-Being*, 17(1), e12651.
15. Vafa, S., Yong, M. H., **Marzuki, A. A.**, Ng, A. L. O., & Schaefer, A. (2025). Online cognitive stimulation intervention (CSI): A novel approach to improve cognitive functions in healthy older adults. *Psychology and Aging*.
16. Ahmad, A. H., Zabri, S. H., Roslan, S. M., Ayob, N. A., Abd Hamid, A. I., ... **Marzuki, A. A.** & Zakaria, R. (2024). Diffusion Magnetic Resonance Imaging and Human Reward System Research: A Bibliometric Analysis and Visualisation of Current Research Trends. *The Malaysian Journal of Medical Sciences: MJMS*, 31(4), 111.

ACCEPTED REGISTERED REPORTS

1. **Marzuki, A. A.**, Gloy, K., Kandler, C., Yip, W. Z., Wong, K. Y., Phon-Amnuaisuk, P., ... & Schaefer, A. (2023). Error-and inhibitory-related brain activity associated with political ideology: A multi-site replication study. *PsyArXiv*. (Accepted at *Cortex*)
2. Gloy, K., **Marzuki, A. A.**, Schaefer, A., Jenkins, M. J., de Vries, I. E. J., Phon-Amnuaisuk, P., ... & Kandler, C. (2023). Revisiting the Neurocognitive Correlates of the Behavioral Inhibition and Activation Systems. *PsyArXiv*. (Accepted at *Cortex*)

MANUSCRIPTS UNDER CONSIDERATION

1. **Marzuki, A. A.**, Kosina, L. A., Hewitt, S., Hauser, T. U. Drops in confidence precede symptoms of obsessive-compulsive disorder: An ecological momentary assessment study. (Under review at *Nature Communications*)
2. Tong, K., Uchiyama, R., ... **Marzuki, A. A.**, ... Robbins, T. W. (2024). Cognitive Flexibility: Separate Shifting and Strategy Factors? (Under review at *Nature Communications*)
3. Pereira de Souza, A.M.F.L., Mpavaenda, D., Banca, P., Wellsted, D., Hopkins, J., **Marzuki, A. A.**, ... Fineberg, N. Habit as a therapeutic component in psychological treatment for obsessive-compulsive disorder: A randomised controlled feasibility study. (Under review at *Comprehensive Psychiatry*)

MANUSCRIPTS IN PREPARATION

1. **Marzuki, A. A.***, Kadri, K.*, del Rio, M., Hauser, T.U. Dorsomedial prefrontal cortex as an integrative hub for information gathering (*joint lead authorship; to be submitted to *Nature Human Behaviour*).

FUNDING AND AWARDS

King's Prize Fellowship

2025

- Fellowship valued at ~£140,000 by King's College London, awarded to outstanding postdoctoral scientists to undertake independent research.

- G.A. Lienert Foundation Stipend** 2025
- Award valued up to €3200 for research visit to Aarhus University, Denmark for project entitled: "When it just doesn't feel right! Exploring altered interoceptive processes in mental health disorders".
- 1st Place Hackathon Winner for Max Planck Institute of Cybernetics Annual Retreat** 2024
- Awarded for project entitled: "An app-based tool for improving homework compliance in cognitive behavioural therapy".
- Travel Award for Computational Psychiatry Conference, Trinity College Dublin** 2023
- One of 10 best abstracts selected for €1000 travel award.
- People's Choice Award for Poster, Society for Neuroscience, Singapore Chapter** 2022
- For poster presented at Society for Neuroscience Annual Symposium, Singapore.
- Outstanding Flash Talk Award, Society for Neuroscience, Singapore Chapter** 2021
- For talk entitled 'Enhanced action updating in a dynamic environment associated with adolescent obsessive-compulsive disorder' delivered at Society for Neuroscience Annual Symposium, Singapore.
- G.C Grindley Grant, University of Cambridge** 2020
- Awarded £3000 to complete and publish final 3 months of PhD research.
- Seton-Cavendish Award, Downing College, University of Cambridge** 2019
- Awarded £250 for travel to present poster at British Neuroscience Association's Festival of Neuroscience
- PhD Studentship, University of Cambridge** 2018 - 2021
- PhD stipend (value: £43,200) supported by Wellcome Trust Senior Investigator Award awarded to Professor Trevor Robbins.
 - Tuition fee waiver associated with staff research assistant post.
- Khazanah Foundation Global Scholarship Programme** 2014 - 2017
- Awarded competitive merit-based scholarship (value: £133,142.87) to pursue undergraduate studies in University College London

AD-HOC REVIEWING

Psychological Medicine, JAMA Network Open, Biological Psychiatry, Translational Psychiatry, Comprehensive Psychiatry, BMC Psychiatry, Communications Psychology, npj Aging, Molecular Psychiatry

TEACHING AND OTHER WORK EXPERIENCE

- Master's Project Supervisor, University of Tübingen, Germany** 2025
- Supervisor for master's student undergoing lab rotation as part of MSc in Cognitive Science programme.
- Undergraduate Thesis Supervisor, University of Tübingen, Germany** 2024
- Supervised final-year thesis for BSc in Cognitive Science student (passed with Distinction).
- Teaching Fellow and Supervisor, Sunway University, Malaysia** 2022 - 2023
- Delivered tutorials for 3rd year BSc Psychology module Neuropsychology.
 - Thesis co-supervisor of one PhD student at Sunway University (passed) and one final-year undergraduate at Monash University, Malaysia (passed with Distinction).
- Lecturer, International University of Malaya-Wales, Malaysia** 2021
- Prepared and taught the following undergraduate level modules: Cognitive Psychology, Statistics in Psychology, Individual Differences, Cross-Cultural Psychology, Introductory Business Statistics.
 - Supervised 18 students in their final-year research projects.

Facilitator for Aspire to Inspire Programme, Save School for Refugees Malaysia 2021

- Organised by Small Changes Organisation Malaysia. Designed and facilitated seminars coaching refugee school students on topics ranging from cultural integration to internet and financial literacy. The aim of this programme was to equip students with the skills necessary to thrive in Malaysian society and ultimately enter the workforce.

Module Creator for Science Seekers Programme, Malaysia 2021

- Jointly organised by Immersion Experience for Malaysian Youths and 100 Scientists of Malaysia. Prepared lecture materials and organised online interactive sessions to introduce secondary school students to undergraduate-level Psychology. Covered topics related to psychological research design and statistics.

Clinical Psychology Intern, Kuala Lumpur General Hospital, Malaysia 2016

- Shadowed neuropsychologists and aided in administration and interpretation of cognitive assessments delivered to patients with neurodegenerative and psychiatric disorders. Developed educational materials to aid patients with anxiety and stress management.

PUBLIC LECTURES AND TALKS

From Political Ideology to Behavioural Activation-Inhibition: How error processing and conflict monitoring links to various processes. (Invited Upcoming Talk)

22nd World Congress of Psychophysiology 2025, Krakow Poland

Dissecting the Neurocognitive Profiles Associated with Healthy Ageing (Invited Talk)

South Asian Ageing Network Meeting and Research Symposium 2024, University of Lancaster.

Neurocognitive Correlates of Healthy Ageing: A Computational Neuroscience Approach (Talk)

Joint Sunway University-Lancaster University Ageing Research Symposium 2022.

Enhanced action updating in a dynamic environment associated with adolescent obsessive-compulsive disorder (Flash Talk)

Society for Neuroscience Singapore Chapter Symposium 2021. Awarded 'Outstanding Flash Talk'.

Using RStudio for Quantitative Data Analysis (Invited Online Workshop)

International University of Malaya-Wales, 2021

Are neurocognitive endophenotypes of OCD present in paediatric patients? (Poster Selected for Flash Talk)

Building Bridges in Medical Science Conference, Cambridge 2020

Neurocognition in Obsessive-Compulsive Disorder (Invited Talk)

Brampton Manor Sixth Form PhD Speaker's Day, London 2019

Reversal Learning in Adolescents with Obsessive-Compulsive Traits (Talk)

Downing College Seminar Night, University of Cambridge 2018

SELECTED POSTER PRESENTATIONS

Marzuki, A. A., Kosina, L. A., Hewitt, S., Hauser, T. U. (2025) Drops in confidence precede symptoms of obsessive-compulsive disorder. Presented at Computational Psychiatry Conference 2025, Tübingen.

Marzuki, A. A., Wong, K. Y., Chan, J. K., Na, S. Y., Thanaraju, A., Phon-Amnuaisuk, P., ... & Schaefer, A. (2024). Mapping computational cognitive profiles of aging to dissociable brain and sociodemographic factors. Presented at UCL-International Max Planck Research School Cognitive Neuroimaging Summer School 2024, London.

Marzuki A.A., Tomić I., Vaghi M., ... & Robbins T.W. (2023, July). Task stochasticity promotes altered latent cognition in youths with OCD. Presented at Computational Psychiatry Conference 2023, Trinity College Dublin.

Marzuki A.A., Thanaraju A., Ong J., Yip W.Z., Yap Z., ... & Schaefer A. (2022, December). AGEWELL: Investigating the predictors of healthy neurocognitive ageing in a socioeconomically and ethnically diverse Malaysian cohort. Presented at Annual Meeting of the Society for Neuroscience, Singapore chapter. **Awarded 'People's Choice Award'.**

Marzuki A.A., Ip H.Y.S., Kanen J.W., Gottwald J., Kaser M., Sule A., Conway-Morris A., Sahakian B.J., Robbins T.W. (2020, September). Juvenile-OCD Associated with Altered Cognitive Mechanisms Underlying Probabilistic Reversal Learning. Presented at International College of Obsessive-Compulsive Spectrum Disorders Annual Meeting (Online).

Marzuki A.A., Pereira de Souza A.M.F.L., Sahakian B.J., Robbins T.W. (2020, March). Are neurocognitive endophenotypes of OCD present in paediatric patients? A systematic review. Presented at Building Bridges in Medical Science Conference 2020, University of Cambridge.

Marzuki A.A., Apergis-Schoute A., O'Callaghan C., Sahakian B.J., Robbins T.W. (2019, April). Learning and Decision-Making in Adolescents with Obsessive-Compulsive Traits. Presented at British Neuroscience Association's Festival of Neuroscience 2019, Dublin.

SELECTED MEDIA COVERAGE

Malaysian Study Links Slow Decision-Making To Advanced Brain Ageing

Business Today (January 2025): <https://www.businesstoday.com.my/2025/01/17/malaysian-study-links-slow-decision-making-to-advanced-brain-ageing/>

How to make tough decisions when things feel especially uncertain

Fast Company (February 2022): <https://www.fastcompany.com/90717376/how-to-make-tough-decisions-when-things-feel-especially-uncertain>

How do we make decisions when faced with uncertainty?

World Economic Forum (December 2021): <https://www.weforum.org/stories/2021/12/covid-19-decision-making-science-cognitive/>

How uncertainty can impair our ability to make rational decisions – new research

The Conversation (November 2021): <https://theconversation.com/how-uncertainty-can-impair-our-ability-to-make-rational-decisions-new-research-172525>

Researching the impact of OCD on learning and decision-making

Science Media Centre Malaysia (May 2020): <https://sciencemediacentremalaysia.com/research-insider/2020/05/research-insider-researching-the-impact-of-ocd-on-learning-and-decision-making/>
