Lukas William Mayer

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2028 (Expected)

2022

2021

Irvine, California, USA

Coventry, England, UK

Stirling, Scotland, UK

Education



Ph.D. Cognitive Sciences

University of California, Irvine

Thesis: Bayesian modelling of inversion problems in human-AI interaction (preliminary title) Advisor: Professor Mark Steyvers Focus: Computational modelling of human problem-solving abilities and alignment of AI systems with human cognition



M.Sc. Behavioral and Data Science (Distinction) University of Warwick

Thesis: Cognition-Inspired Heuristics Improve Machine-Learning Predictions in Multi-Attribute Multi-Alternative Choice **Advisor:** Professor Nick Chater **Awards: Best Overall Score**: Behavioral and Data Science (equivalent to **Summa Cum Laude**)

Focus: Unifying models from computational cognitive science and machine learning



B.Sc. with Honors Psychology (First-Class) University of Stirling

Thesis: Cooperation does not improve selective and/or sustained attention **Advisors:** Dr. John Michael and Dr. Ross Goutcher

Awards: Peter McEwan Prize for the Best Single Honours Psychology Student (equivalent to Summa Cum Laude)

Alan Baddeley Prize for the Best Psychology Dissertation

Focus: Measuring cognitive abilities in online games

Research Experience

| Research Assistant: Center for Research and Evidence on Security Threats University of Bath, School of Management | 2022 - 2023 Bath, England, UK | |
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| Conducted large-scale mixed methods study concerned with the prediction of online group communications which translate into real-world actions | | |
| Developed own project investigating algorithms for complex research appointment scheduling Principal Investigator : Professor Adam Joinson | | |
| Research Assistant: Centre for Cognition in Complex Environments University of Stirling, Department of Psychology | 2019 - 2021 Stirling, Scotland, UK | |
| Execution and data analysis of experiments concerning face matching and concealed identity recognition Principal Investigator : Dr. Ailsa E. Millen | | |
| Research Assistant: Centre for Cognition in Complex Environments University of Stirling, Department of Psychology | 2021 Stirling, Scotland, UK | |
| Automated video analysis for discrimination learning in lumpfish | | |

Principal Investigator: Dr. Jamie Murray

Publications

Steyvers, M., Tejeda, H., Kumar, A., Belem, C., Karny, S., Hu, X., **Mayer, L. W.**, & Smyth, P. (2025). What large language models know and what people think they know. *Nature Machine Intelligence*. https://doi.org/10.1038/s42256-024-00976-7

Karny, S., **Mayer, L. W.**, Ayoub, J., Song, M., Su, H., Tian, D., Moradi-Pari, E., & Steyvers, M. (2024). Learning with AI Assistance: A Path to Better Task Performance or Dependence? *Proceedings of the ACM Collective Intelligence Conference*, 10–17. https://doi.org/10.1145/3643562.3672610

Mayer, L. W., Bocheva, D., Hinds, J., Brown, O., Piwek, L., Ellis, D. (under Review) Waste not want not: Computational methods to maximise attendance in group research. *Behavior Research Methods*.

Miscellaneous



| Miscellaneous | | |
|---------------|--|------|
| ×××× | Digital Methods Initiative Winter School - The use and misuse of Open Source Intelligence University of Amsterdam, Amsterdam, North Holland, The Netherlands | 2023 |
| UNIVERSITAT | International Interdisciplinary Computational Cognitive Science Summer School University of Tübingen, Tübingen, Baden-Württemberg, Germany | 2023 |
| (*) * | NeuroMatch Academy Summer School: Deep Learning NeuroMatch Academy, Los Angeles, California, USA | 2022 |