Lukas William Mayer

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Education

Ph.D. Cognitive Sciences   **2028 (Expected)**
University of California, Irvine   *Irvine, California, USA*

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)   **2022**
University of Warwick   *Coventry, England, UK*

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)   **2021**
University of Stirling   *Stirling, Scotland, UK*

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   **2022 - 2023**
University of Bath, School of Management   *Bath, England, UK*

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   **2019 - 2021**
University of Stirling, Department of Psychology   *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   **2021**
University of Stirling, Department of Psychology   *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

Digital Methods Initiative Winter School - The use and misuse of Open Source Intelligence   2023

University of Amsterdam, Amsterdam, North Holland, The Netherlands

International Interdisciplinary Computational Cognitive Science Summer School   2023

University of Tübingen, Tübingen, Baden-Württemberg, Germany

NeuroMatch Academy Summer School: Deep Learning   2022

NeuroMatch Academy, Los Angeles, California, USA