

Lukas William Mayer

Willuk@vivaldi.net · Lab · Github · Website

Education



Ph.D. Cognitive Sciences
University of California, Irvine

2028 (Expected)
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)
University of Warwick

2022
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)
University of Stirling

2021
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
University of Bath, School of Management

2022 - 2023
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
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., Tejada, 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