Melina Müller

Tel: • Email:

MSc Cognitive Science student with research and teaching experience in computational neuroscience, psychology, and mathematics, who is interested in developing AI-based real-world medical applications using brain imaging data.

Education

MSc Cognitive Science - On track for First Class
University of Edinburgh *Sep 2023 – Aug 2024*

Courses included:

- Computational Neuroscience: 94%
- Applied Machine Learning: 81%
- Seminar in Cognitive Modelling: 79%
- Human-Computer Interaction: 72%

Dissertation:

- Title: Using Tensor Decomposition to Visualise the Evolution of Neural Network Dynamics during Task Learning
- Analysing task trained RNN models to understand the emergence of learning
- Limited time requires efficient project and time management skills to meet aims
- *Supervisor:* Dr Angus Chadwick

BSc (Hons.) Mathematics and Psychology - First Class with Honours
University of Stirling *Sep 2019 – Jun 2023*

Courses included:

- Linear Algebra: 100%
- Numerical Analysis: 93%
- Introduction to Computer Science: 97%
- Brain and Behaviour: 83%

Dissertation in Mathematics: 88%

- Title: Application of Tensor Decomposition (TD) in Neuroscience
- Researched insights gained from using TD on fMRI and EEG data
- Taught myself how to apply TD on an fMRI dataset
- *Supervisor:* Dr Wen-shin Lee

Research Project in Psychology: 75%

- Title: Text Compared to Sound-based Notifications to Reinforce Implementation Intentions to Practise Relaxation Breathing
- Worked as a coherent team of four with equal responsibility to carry out research
- *Supervisor:* Dr Wendy Maltinsky

Publications

- **Müller, Melina**; Hancock, Peter J.B.; Cunningham, Emily K.; Watt, Roger J.; Carragher, Daniel and Bobak, Anna K.(2024). Automated face recognition assists with low-prevalence face identity mismatches but can bias users. [Manuscript submitted for publication].

Awards

- The Phyllis Lee Prize for the best Combined Honours Psychology student
- Prize for outstanding performance in year 2 mathematics module
- Certificate of excellence for showing outstanding leadership, independence, reliability, and citizenship as a Student Tutor for undergraduate students

Research Experience

EPS New Graduate Research Project *May – Jul 2023 • University of Stirling*

- Topic: Influence of Automated Face Recognition Software on Human Face Matching Ability
- Conducted self-proposed research project from start to finish
- Resulting paper is currently under review at the British Journal of Psycholgogy
- Attended Scottish International Policing Conference: Community Well-Being & Safety
- *Supervisors*: Dr Anna Bobak, Prof. Peter Hancock

Research Assistant *Jul 2023 • University of Stirling*

- Topic: Illness Perception of Breathing Pattern Disorder
- Statistical analysis of results
- *Supervisor:* Dr Wendy Maltinsky

Volunteer Research Assistant *Jan 2022 – May 2023 • University of Stirling*

- Topic: EEG Activity During Joint Action in a Virtual Environment
- Developed a VR environment using the game engine Unity and C#
- Presented and explained my work in a Master's course
- *Supervisors:* Dr Dimitrios Kourtis, Mr Samuel Bennett.

Teaching Experience

Volunteer Mentor *Sep 2022 – Apr 2023 • University of Stirling*

- Held seminars for first-year psychology students
- Expanded my leadership abilities by helping them form a sense of community
- Increased teaching and academic skills through teaching practical skills such as academic writing and time management

Tutor in Research Methods *Jan 2022 – May 2022 • University of Stirling*

- Taught weekly tutorials for undergraduate students
- Succesfully explained and applied difficult concepts in research methods
- Deepened my own understanding and knowledge of statistics

Private Tutor *Jan 2016 – Aug 2021*

- Periodically taught primary and high school students in mathematics
- Organised and created teaching materials and plans tailored to individual needs
- Improved students' grades and understanding of the topics by actively listening to their problems and finding creative pedagogic approaches

Skills & Interests

Languages

- German (native language)
- English (proficient)

Software Experiences

- Python (incl. Numpy, Pytorch, Scikit-learn, Pytest)
- Unity
- C#
- MATLAB
- Java
- Git

Interests

- Judo: promots self-discipline and control; I was secretary of University of Stirling's Judo Club, where I organised the club and events.
- Fibre arts: sewing, knitting, crocheting