Lu **LENG**

Brussels, Belgium | (+32)486-38-60-32 | luleng2019@gmail.com | lu-leng-55b242242

EXPERIENCE

Research Fellow | KU Leuven *Oct. 2019 - Present*

- Preprocessed 1TB unstructured behavioral, psychophysiological, and neuroimaging data (e.g., linear transformation, temporal filtering, spatial smoothing) for 6 projects, resulting in 6 publications in esteemed scientific journals.
- Applied advanced statistics in R to improve understanding of human behaviors and emotions. Ensured transparency and reproducibility by making all data and scripts freely accessible on the Open Science Framework.
- Supervised 11 international master students and research interns with various backgrounds. Coordinated weekly meetings to review progress, troubleshoot issues, and ensure the timely completion of research objectives.

Selected projects

Maladaptive learning in anxiety and depression

- Designed and built the reinforcement learning tasks from scratch to align them with research objectives and standards. Scripted in R for data processing and visualization. Created clear, code-based, and insightful graphical representations in Rmarkdown to enhance reproducibility and facilitate effective communication with the stakeholders.
- Employed advanced statistics including data multiverse, clustering, principal component analysis, and mixed effects modeling. Discovered distinct maladaptive learning profiles for anxiety and depression despite their high comorbidity rate, contributing to a deeper understanding of psychological conditions.
- Led this project of 2 graduate students and 6 research assistants for over 4 years. Coordinated and managed large dataset collection to ensure data accuracy and integrity. Provided comprehensive training on collecting data in the lab and processing psychophysiological signals using Ledalab in MATLAB.

Neural signature of relief

- Designed and executed fMRI experiments to investigate brain activation patterns, specifically examining whether relief activates pleasure sites in the brain using advanced neuroimaging techniques.
- Preprocessed raw data using High Performance Computing cluster with parallel computing. Analyzed neuroimaging data in MATLAB and R using statistical methods (e.g., region of interest analysis, conjunction analysis) and machine learning techniques (e.g., Multivariate Pattern Analysis) to identify significant brain activation patterns associated with relief.
- Demonstrated that in the brain, the processing of relief engaged similar brain regions that are typically involved in processing rewards, with overlapping activations in specific regions.

Teaching Assistant | KU Leuven *Oct. 2019 - Present*

- Conducted weekly lectures and provided hands-on training in R for psychology master students in advanced statistics (e.g., A/B testing, ANOVA, linear regression, mixed effects models, model selection, cross-validation).
- Designed and evaluated both data analysis reports and R codes for assignments and exams, ensuring high standards of academic rigor and practical application.

Online Game Programmer | KU Leuven *Mar. 2020 - Dec. 2023*

- Designed online games targeting different age groups for several research teams to study various learning performances.
- Developed games using JavaScript and Python with precise rules tailored to meet specific research needs and designed intuitive interfaces to engage participants. All code is hosted on GitHub.

Lab Outreach Coordinator | KU Leuven *Dec. 2019 - Present*

- Designed, built, and maintained the BRAMlab website for the entire research team, ensuring a user-friendly interface and robust functionality to enhance the research team's online presence and accessibility.
- Created and maintained the social media platform for the lab, increasing visibility within the research community.

SKILLS

Languages/Tools	R, Python, MATLAB, SQL, JavaScript, Git, Github, SPSS, JASP.
Stats/Experiments	A/B testing, UX research, experimental design, causal inference, generalized linear mixed model (GLMM), classification, clustering, principal component analysis.
Recognition and awards	Received the Best Poster Award three times at international conferences; Received the Best Article Prize at international doctoral school. See my google scholar page for full publications.

EDUCATION

Ph.D. in Experimental Psychopathology | KU Leuven, Belgium *Oct. 2019 - Oct. 2024*

DATA SCIENCE SPECIALIZATION

M.Sc in General Psychology | KU Leuven, Belgium *Sept. 2017 - Sept. 2019*

MAGNA CUM LAUDE, MASTER MIND SCHOLARSHIP

B.Sc in Psychology | Beijing Normal University, China *Sept. 2013 - Jul. 2017*

HONOR SCHOLARSHIP (TOP 2%)