Milena Rmus

PhD Candidate, UC Berkeley

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Milena Rmus

Education

Aug 2019 – May 2024 (Expected) | **University of California, Berkeley**
PhD in Cognitive science, Advisor: Dr. Anne Collins

Aug 2014 – May 2018 | **Brown University**
BS Cognitive Neuroscience, Magna Cum Laude

Work Experience

05/2022 - 08/2022 | **Lawrence Livermore National Lab**
Data Science Intern
- Multi-objective optimization in reinforcement learning (Python)
- Big data machine learning (Python)

2018 - 2019 | **Princeton University**
Research Specialist
- Behavioral and fMRI data analysis (Matlab, R, Python)
- Experiment design and web development (JavaScript)

Publications

- Rmus, M., Pan, T., Xia, L. & Collins, A. G. E. (2023). Artificial neural networks for model identification and parameter estimation in computational cognitive models. **bioRxiv**. PDF (under review).
- Rmus, M., He, M., Baribault, B., Walsh, E. G., Festa, E. K., Collins, A. G. E. & Nassar, M. R. (2023). Age-related differences in prefrontal glutamate are associated with increased working memory decay that gives the appearance of learning deficits. **eLife** PDF
- Thornton, M. A.,Rmus, M., Dyvas, A. D., & Tamir, D. (2023). Mental state dynamics explain the origin of mental state concepts. **Journal of Experimental Psychology: General(in print)**. PDF
- Rmus, M., Zou, A. & Collins, A. G. E. (2023). Choice type impacts human reinforcement learning. **Journal of Cognitive Neuroscience**. PDF
- Rmus, M., Ritz, H., Hunter, L. E., Bornstein, A. M. & Shenhav, A. (2022). Humans can navigate complex graph structures acquired during latent learning. **Cognition**. PDF
- Rmus, M., McDougle, S. D. & Collins, A. G. E. (2021). The role of executive function in shaping reinforcement learning. **Current Opinion in Behavioral Sciences**. PDF

Peer-reviewed conference publications

- Rmus, M., Eckstein, M. K., & Colins, A. G. E. (2023). The role of subgoals in hierarchical reinforcement learning. Conference on Computational Cognitive Neuroscience. PDF
- Rmus, M., Xia, J., Collins, J. & Collins, A. G. E. (2022). Using Deep Learning tools for fitting Reinforcement Learning Models. Conference on Computational Cognitive Neuroscience. PDF
- Rmus, M. & Collins, A. G. E. (2020). What is a Choice in Reinforcement Learning? Proceedings of the 42nd Annual Meeting of the Cognitive Science Society. PDF

Conference presentations

- Rmus, M. & Collins, A. G. E. (2023). "Pressing a piano key, or playing a G note? Choice type impacts human reinforcement learning". **Society for Neuroscience**. [Talk]
- Rmus, M., Xia, J., Collins, J. & Collins, A. G. E. (2022). Using Deep Learning tools for fitting Reinforcement Learning Models. **Conference on Computational Cognitive Neuroscience**. [Poster]
- Rmus, M., He, M., Baribault, B., Festa, E. K., Collins, A. G. E. & Nassar, M. R. (2022). Reinforcement learning and working memory changes across lifespan: bridging cognition, computation and neuroscience.**Cognitive Neuroscience Society Annual meeting**. [Poster]
- Rmus, M. & Collins, A. G. E. (2020). What is a Choice in Reinforcement Learning? **Proceedings of the 42nd Annual Meeting of the Cognitive Science Society**. [Poster]
- Rmus, M. Mildner, J., Meyer, M., Hershfield, H., Waytz, A., & Tamir, D., Pattern dissimilarity distinguishes proximal and distal simulation in creative experts. (2019).**Social and Affective Neuroscience Society**. [Poster]
- Rmus M., Ritz, H., Hunter, L.E., Bornstein, & A.M., Shenhav, A. (2019). Model-baseddecision making is associated with structure inference ability. **3rd Multidisciplinary Conference on Reinforcement Learning and Decision Making**.[Talk, presented by Harrison Ritz]
- Rmus M., Ritz, H., Hunter, L.E., Bornstein, A.M., & Shenhav, A. (2018). Model-based decision making is associated with structure inference ability. **Society for Neuroeconomics**. [Talk]

Teaching Experience

- PSYCH C123 Computational Models of Cognition, Graduate Teaching Assistant, UC Berkeley (2020, 2023)
- CLPS1590 – Visualizing Vision, Undergraduate Teaching Assistant, Brown University (2018)
- CLPS0220 – Making Decisions, Undergraduate Teaching Assistant, Brown University (2017)
- CLPS1700 – Abnormal Psychology, Undergraduate Teaching Assistant, Brown University (2017)
- CLPS0701 – Personality, Undergraduate Teaching Assistant, Brown University (2016)

Honors

- 2020 Graduate Remote Instruction Innovation Fellows Program (UC Berkeley)
- 2018 Teaching Assistant Kling Award (Brown University)
- 2018 Departmental Honors Award (Brown University)
- 2017 Brown Connect LINK Award (Brown University)

Technical Skills

Languages: Python (expert), Matlab (expert), JavaScript(fluent), R(fluent), SQL (prior experience), LaTeX(prior experience)

Frameworks and tools: Pandas, Keras, TensorFlow, NumPy, Scikit-Learn, jQuery, jsPsych, Matplotlib, Seaborn, ggplot2, Git, Notion, Trello, Adobe Illustrator, Adobe Photoshop