CV

Summary of Research Field, Skills, and Portfolio

David Munoz-Tord

Main Portfolio Links:

- Portfolio Website
- GitHub

Research Field Summary:

I specialize in the intersection of social cognitive neuroscience and behavioral sciences, with a focus on understanding the cognitive and affective processes underlying human behavior. My research explores the neural mechanisms of decision-making, social cognition, and emotional processing, shedding light on how these processes influence behavior and drive social interactions. By leveraging advanced statistical analysis and experimental methodologies, I uncover insights into behavioral patterns and neural responses, contributing to a deeper understanding of human behavior and cognition.

List of Publications:

1. **Investigating the effect of liraglutide on self-reported liking and neural responses to food stimuli.**
    - *Journal: Journal of Obesity (2023)*
    - Read Paper
2. **Differential contributions of ventral striatum subregions to the motivational and hedonic components of the affective processing of reward.**
    - *Journal: Journal of Neuroscience (2022)*

- Read Paper

3. **3D-printed pacifier-shaped mouthpiece for fMRI-compatible gustometers.**
   - *Journal: Eneuro (2021)*
   - Read Paper
4. **Early spatial attention deployment towards aggressive voices.**
   - *Journal: Social Cognitive and Affective Neuroscience (2019)*
   - Read Paper

Freelancing Projects:

- **Technical Consulting at DuckRabbit** Provided technical consulting services to DuckRabbit, a Swiss startup specializing in cognitive and educational technologies. Collaborated to translate academic research from cognitive neuroscience and developmental psychology into tangible solutions, offering expertise in machine learning implementations.
- **Data Reporting Infrastructure at CICAD** Collaborated with cross-functional teams within the CICAD to establish and maintain a data reporting infrastructure. Focused on survey data analysis and sentiment analysis applications, implementing best practices for process automation to improve data management and reporting workflows.
- **EPFL Project Development** Led the development and launch of a scientific project in partnership with EPFL, transforming initial scripts into a user-friendly software accessible to clients via cloud services. Direct link to the GitHub repository.
- **Freelancing Projects at Opifex** Active maintainenance of echarts4r, a powerful R package that enhances interactive data visualizations with a versatile rendering engine. And contributed extensively to the fiRebase package for R, empowering the Shiny user community with user authentication and secure file storage through Google Firebase API

Projects:

- Shiny Dashboard for ProVelo: An interactive Shiny dashboard developed in collaboration with ProVelo to enhance road safety analysis in Geneva. This state-of-the-art platform offers insights and comprehensive accident data visualization, catering to a wide range of users, from policymakers to data enthusiasts.
- We Data Organization: Co-President of We Data, an organization dedicated to sharing knowledge on data science, conducting statistics workshops, and organizing coding demonstrations. We also host the R-Lunches to foster learning and collaboration in the data science community.

- hBayesDM Collaboration: Collaborated on the hBayesDM package, a computational modeling tool for behavioral data analysis. Involved in building the Q-learning algorithm for probabilistic selection tasks.
- Computational Modeling Methods: Developed methods for the computational modeling of behavioral data, demonstrating proficiency in advanced analysis techniques.
- REBUND: Experiment framework in JavaScript using lab.js and Pavlovia integration to investigate cognitive and affective behavioural responses related to rewards.
- DbVieweR - Database Management for R: Creator of the Shiny app simulating a database management system with features like login authentication, table operations, and column management using PostgreSQL or SQLite back-end.
- reprtree: Collaborator on integrating the caret ensemble for reprtree, implementing representative trees from ensembles of tree-based machines.
- 3dLMEr - Linear Mixed-Effects Regression: Collaborator on the AFNI's functions for 3D Linear Mixed-Effects Regression. Improved residuals output by adding bottom tolerance.