# Marwin Machay Indio do Brasil do Carmo

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## EDUCATION

**University of California, Davis**, Ph.D. Quantitative Psychology                                    2023–Present
*Advisor*: Philippe Rast, Ph.D.
*Research topics*: Intra-individual variability, Mixed-effects location scale models, Bayesian inference, Gaussian graphical models
**University of São Paulo**, M.Sc. Psychiatry                                                          2021–2023
Recipient of a Master's Fellowship from Sao Paulo Research Foundation (FAPESP)
*Advisor*: Renatha El-Rafihi Ferreira, Ph.D.
**Rio de Janeiro State University**, Bachelor in Psychology                                             2014–2019

## PUBLICATIONS

### *Peer-Reviewed Journal Articles*

\* *denotes manuscript in Portuguese*

1. Rafihi-Ferreira, R., Hasan, R., Toscanini, A. C., Linares, I. M. P., Borges, D. S., Brasil, I. P., **Carmo, M.**, Neto, F. L., Morin, C. (2024). Acceptance and commitment therapy versus cognitive behavioral therapy for insomnia: A randomized controlled trial. *Journal of Consulting and Clinical Psychology.* https://doi.org/10.1037/ccp0000881

2. **Carmo, M. M. I. B.**, Leme, V. B. R., Quiterio, P. L. (2024). Social skills and people with disabilities: overview of Brazilian research. *Psicologia Escolar e Educacional.* https://doi.org/10.1590/2175-35392024-246235-T

3. Rafihi-Ferreira, R., **Carmo, M. M. I. B.**, Bassoli, L., Hasan, R., Aizawa, I. M. I., & Toscanini, A. C. (2022). Cognitive and psychological factors associated with severe insomnia in Brazilian women: A cross-sectional study. *Psicologia: Reflexão e Crítica.* https://doi.org/10.1186/s41155-022-00243-x

4. \*Quiterio, P. L., Nunes, L. R. O. P., Camelo, B. L., Silva, J. P., & **Carmo, M. M. I. B.** (2021). Promoting the social skills of future teachers focusing on inclusive education. *Estudos e Pesquisa em Psicologia.* https://doi.org/h43p

5. \*Quiterio, P. L., Leme, V. B. R., **Carmo, M. M. I. B.**, Silva, J. P., & Camelo, B. L. (2021). Family guidance program developed in the applied psychology service of a public university. *Psicologia Clínica.*

6. \***Carmo, M. M. I. B.**, Gilla, C. G., & Quiterio, P. L. (2020). A study about the inclusion of people with disabilities in the Brazilian labour market. *Interação em Psicologia.* https://doi.org/h43q

### *Under Review*

1. **Carmo, M.**, Williams, D. R., & Rast, P. Beyond Average Scores: Identification of Consistent and Inconsistent Academic Achievement in Grouping Units. Under review at *Journal of Educational and Behavioral Statistics.* [preprint]

2. **Carmo, M.**, Rafihi-Ferreira, R., Paulos-Guarnieri, L., & Pires, M. L. N. The Sleep Acceptance Scale (SAS): Development, Psychometric Properties, and Applications. Under review at *Behavioral Sleep Medicine..*

3. Conway, B. A., **Carmo, M. M. I. B.**, Filho, H. S. L. S., Alves, M. M., Hasan, R., Toscanini, A. C., & Rafihi-Ferreira, R. Personality traits and insomnia: direct and anxiety-mediated associations. Under review at *Journal of Sleep Research.*

### *Manuscripts in Preparation*

1. **Carmo, M.**, Morin, C. M., Hasan, R., Toscanini, A. C., & Rafihi-Ferreira, R. *The network of dysfunctional beliefs about sleep: a structural re-analysis of the DBAS-16.* [preprint]

2. Ingram, E. O., **Carmo, M.**, Manderino, L., Rast, P., & Karr, J. E. *A Network Approach to Concussion-like Symptoms: Comparing Central Symptoms between Young Adults with and without Concussion History.* [In preparation for submission]

*Blogs*

1. **Carmo, M. M. I. B.** (2022). Simulating post selection inference. [post]

2. **Carmo, M. M. I. B.** (2021). Regression Artifact - Re-running Farmus et. al (2019). [post]

## PRESENTATIONS

*Selected Conference Presentations*

1. **Carmo, M.**, Williams, D. R., & Rast, P. (2024, July). A holistic view of academic performance: beyond averages with MELSM and spike- and-slab. *89th Annual Meeting of the Psychometric Society*, Prague, Czech Republic. [poster]

2. Ingram, E. O., **Carmo, M.**, Manderino, L., Rast, P., Karr, J. E. (2025, February). Network centrality of post-concussion symptoms in young adults with and without a remote history of concussion. *Annual Rehabilitation Psychology Conference*, Louisville, Kentucky, USA.

3. Ingram, E. O., **Carmo, M.**, Manderino, L., Rast, P., Karr, J. E. (2025, March). A network approach to post-concussion symptoms: Comparing central symptoms between young adults with and without concussion history. *World Congress on Brain Injury by the International Brain Injury Association*, Montreal, Canada.

*Departmental Presentations*

1. Beyond Average Scores: Identification of Consistent and Inconsistent Academic Achievement in Grouping Units (Winter 2025). *UC Davis Quantitative Research Seminar.*

2. A holistic view of academic performance: Beyond Averages with MELSM and Spike-and-Slab (Spring 2024). *UC Davis Quantitative Research Seminar.*

## METHODS ESTABLISHED

**Spike-and-Slab Mixed-Effects Location Scale Model (SS-MELSM)**: The SS-MELSM is a for simultaneously modeling location and scale parameters while incorporating a spike-and-slab prior to select or shrink random effects. It involves identifying clusters with unusually large or small within-cluster variance in academic achievement, which can indicate inconsistent or consistent performance. This method was implemented in the R package `ivd`.

## TEACHING EXPERIENCE

**University of California, Davis**                              September 2023–Present
*Graduate Student Teaching Assistant*                                        Davis, CA

- PSC103B: Statistical Analysis of Psychological Data – **3 quarters** (Winter 24, Spring 24, and Winter 25)
    - Led laboratory sessions, graded assignments and exams, and held office hours.
- PSC012Y: Data Visualization in the Social Sciences – **1 quarter** (Fall 24)
    - Led laboratory sessions, graded assignments, and held office hours.
- PSC001: General Psychology – **1 quarter** (Fall 23)
    - Graded assignments and held office hours.

**Psicometria Online Academy**                                   May 2022–October 2024
*Virtual Teaching Assistant* (Psychometrics)                                   Remote

- Provided support to students' questions in topics such as general linear models, multivariate statistics, structural equation modeling, factor analysis, item response theory and research methods.

## MENTORSHIP ROLES

**Undergraduate Research Mentor**
Max Vo, UC Davis                                                 Winter 2025–Present

- Mentored an undergraduate student in developing an interactive Shiny app using R to visualize and analyze intra-cluster variance. This app will work as a user-friendly interface for the `ivd` R package, enabling researchers to explore and analyze complex datasets interactively, enhancing accessibility for non-technical users.

# SUBSTANTIAL ACTIVITIES DURING GRADUATE SCHOOL

- Participated leading a break-out room for international students in the virtual event *Pathways to Graduate School in Quantitative Methods* held in the Fall of 2023. This event seeks to instruct prospective students interested in pursuing Quantitative methods graduate degrees.

# SKILLS

*Programming*

- R: exploratory data analysis, data cleaning, data visualization, statistical data analyses, programmatic reporting (R Markdown/ Quarto), web scraping, dashboards, packages development, Shiny apps development.
- Python: exploratory data analysis, data cleaning, data visualization.

*Tools*

- Statistical softwares: R, Stan, SPSS, JASP, JAMOVI
- Reporting: RMarkdown, Quarto, LaTeX
- Version control: Git and Github
- Reference management: Zotero
- Data collection and management: REDCap