CLAUDIO ZANDONELLA CALLEGHER

PhD Student – University of Padua

My research interests concern the formalization of psychological theories and research hypotheses as statistical models, using informative priors within a Bayesian framework. I am also involved in Open Science, promoting the importance of Design Analysis and developing workflows to enhance research reproducibility and transparency. I am enthusiastic about the solutions and opportunities offered by programming software. In particular, I am an active R programmer and developer of R packages.

🎓 EDUCATION

Current

PhD in Psychological Sciences – Department of Developmental Psychology and Socialization
University of Padua   📍 Padua, Italy
· Predicting social-emotional adjustment in childhood: a Bayesian approach with informative priors Supervisors: Prof. Gianmarco Altoè and Prof. Livio Finos

2018

M.S. in Clinical Developmental Psychology – 110 cum laude
University of Padua   📍 Padua, Italy
· Analyzing the role of father attachment in middle childhood: a Bayesian approach. Supervisor: Prof. Gianmarco Altoè

2016 – 2013

B.S. Psychological sciences and techniques – 110 cum laude
University of Padua   📍 Padua, Italy
· Proximity: evidence of possession in childhood. Supervisor: Prof. Teresa Farroni

💻 ACADEMIC EXPERIENCE

2020

Research Internship
Department of Methodology and Statistics, Utrecht University   📍 Utrecht, the Netherlands
· Formalization of statistical models according to experts' prior knowledge in the Attachment Theory (3 months). Supervisor: Prof. Rens van de Schoot

2018

Pre-Graduate Intership
Medè SNC   📍 Padua, Italy
· Study of clinical cases concerning psychopathology in childhood and adolescence (4 months). Supervisor: Dot. Valentina Boscolo

2016

Pre-Graduate Intership
Department of Psychology, University of Padua   📍 Padua, Italy
· Study of indices of possession in childhood through visual preference. Data collection and analysis (5 months). Supervisor: Prof. Teresa Farroni

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CONTACT INFO

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- 🔗 claudiozandonella.netlify.com
- ⓘ orcid.org/0000-0001-7721-6318

PROGRAMMING SKILLS

Statistics: R, Python, STAN
Database: MySQL
Website: HTML, CSS, HUGO
Other: Git, Docker, Bash, LaTeX

LANGUAGE SKILLS

Italian: native language
English: proficient
German: beginner

💼 WORKING AND TEACHING EXPERIENCE

2020 ● **Data Science Internship**
Kode s.r.l.   📍 Pisa, Italy
· Data Visualization and development of web application (Shiny) in Industry 4.0 (3 months). Supervisor: Dot. Davide Massidda

2019 ● **Supplementary teaching**
Department of Psychology, University of Padua   📍 Padua, Italy
· Laboratory foundamentals of R statistical software (10 hours) in the course Psychological Testing (PSP6075525) Prof. Antonio Calcagnì.

2018 ● **Organizing committee**
Department of Psychology, University of Padua   📍 Padua, Italy
· International Winter Shool 2019, Beyond p<.05: Modern statistica approaches in psychological science

I am passionate about Data Science. Experience in the industry allowed me to learn modern solutions to data analysis and data visualization. I also like to share my experience by writing tutorials and teaching about different programming software.

📖 EDUCATIONAL EXPERIENCE

2021 ● *Mediterranean Machine Learning summer school*

2020 ● *Introduction to Generalized Additive Models with R and mgcv*

● *useR!2020*

● *European R users meeting* (eRum)

● *CAPRI-HPC: Theory and Practice in Sequential and Parallel Job Scheduling*. Course at the Department of Information Engineering (20 hours)

● *Best Practices for Writing Reproducible Code*

● *Bayesian Non-parametrics for Complex Data*

2019 ● *Summer School on Statistical Methods for Linguistics and Psychology*. Advanced Bayesian methods using Stan.

● *StanCon2019*. Hierarchical modeling and model selection with Stan

● *IV SIPS International Conference*. Society for the Improvement of Psychological Science

● *Theory and Methods of Inference*. PhD course held by Prof. A. Salvan at the doctoral programme in Statistics at University of Padua (64 hours)

● *SHeffield ELicitation Framework (SHELF) Training*. Elicitation of probability distributions from experts knowledge

● *Beyond p < .05: Modern statistical approaches in psychological science*.

2018 ● *Functional Analysis*. PhD course held by Prof. A. Cesaroni at the doctoral programme in Statistics at University of Padua (24 hours)

I believe in the importance of continuous learning, experimenting with new techniques and solutions together with developing a strong theoretical knowledge.

⊞ PUBLICATIONS

2020

- Altoè, G., Bertoldo, G., **Zandonella Callegher, C.**, Toffalini, E., Calcagnì, A., Finos, L., & Pastore, M. (2020). Enhancing Statistical Inference in Psychological Research via Prospective and Retrospective Design Analysis. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.02893

- Altoè, G., **Zandonella Callegher, C.**, Toffalini, E., & Pastore, M. (2020). Incorporating Expert Knowledge in Structural Equation Models: Applications in Psychological Research. *Book of Short Papers - SIS 2020*. 50th Meeting of the Italian Statistical Society, Pisa, Italy. https://it.pearson.com/content/dam/region-core/italy/pearson-italy/pdf/Docenti/Universit%C3%A0/Pearson-SIS-2020-atti-convegno.pdf

- Benavides-Varela, S., **Zandonella Callegher, C.**, Fagiolini, B., Leo, I., Altoè, G., & Lucangeli, D. (2020). Effectiveness of digital-based interventions for children with mathematical learning difficulties: A meta-analysis. *Computers & Education*, *157*, 103953. https://doi.org/10.1016/j.compedu.2020.103953

- Valori, I., McKenna-Plumley, P. E., Bayramova, R., **Zandonella Callegher, C.**, Altoè, G., & Farroni, T. (2020). Proprioceptive accuracy in Immersive Virtual Reality: A developmental perspective. *PLOS ONE*, *15*(1), e0222253. https://doi.org/10.1371/journal.pone.0222253

- **Zandonella Callegher, C.**, & Altoè, G. (2020). Data and supplemental material of the paper "Effectiveness of digital-based interventions for children with mathematical learning difficulties: A meta-analysis". *Data in Brief*, *31*, 105976. https://doi.org/10.1016/j.dib.2020.105976

⟨⁄⟩ SOFTWARE

2020

- Gambarota, F., & **Zandonella Callegher, C.** (2020). *Psicostat Personal Website* (1.0.0). https://github.com/ClaudioZandonella/personal_webpage

- **Zandonella Callegher, C.**, Pastore, M., Andreella, A., Vesely, A., Toffalini, E., Bertoldo, G., & Altoè, G. (2020). *PRDA: Prospective and retrospective design analysis* (v1.0.0.900). Zenodo. https://doi.org/10.5281/zenodo.4044214

  R-package available on CRAN https://cran.r-project.org/web/packages/PRDA/index.html

2019

- **Zandonella Callegher, C.**, Toffalini, E., & Altoè, G. (2019). *Eliciting Effect Size—Shiny App*. http://doi.org/10.5281/zenodo.2564852

🖥 SELECTED TALKS AND POSTERS

2020

- **Zandonella Callegher, C.**, Marci, T., & Altoè, G. (2020). *Verba volant, mathematica manent: Formalizing psychological theories as models.* Cognitive Science Arena (7-8 February 2020; Brixen, Italy)

- **Zandonella Callegher, C.**, Vesely, A., Andreella, A., Bertoldo, G., Toffalini, E., Altoè, G., & Pastore, M. (2020). *PRDA package: Enhancing Statistical Inference via Prospective and Retrospective Design Analysis*. useR!2020 (July, 2020; Munich, Germany)

I am a fervent supporter of the fundamental role of replicability and transparency in the research. In each project I collaborate, I adopt the best practice and solution to guarantee replicability and transparency.

I am an active developer of R-packages and web applications using Shiny to offer new instruments to other researchers as well as students.

2019   **Zandonella Callegher, C.**, Marci, T., & Altoè, G. (2019). *The role of mother and father attachment in children's socioemotional-adjustment: A Bayesian model comparison approach.* XIX European Conference on Developmental Psychology (Athens, Greece, 29 August-1 September 2019)

Zandonella Callegher, C., Toffalini, E., & Altoè, G. (2019a). *Elicitazione e utilizzo del parere degli esperti (transl. Elicitation and formalization of experts' knowledge).* XXV AIP National Congress Experimental section, Italian association of psychology (18-20 September 2019; Milan, Italy)

Zandonella Callegher, C., Toffalini, E., & Altoè, G. (2019b). *Eliciting and formalizing experts' knowledge about effect sizes.* Conference, Society for the Improvement of Psychological Science (7-9 July, 2019; Rotterdam, the Netherlands)