

# NADJA R. GING-JEHLI

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## SHORT PROFILE

- **Researcher** in computational psychiatry, model-based cognitive and social-cognitive neuroscience
- **Consultant** for (neuro)cognitive testing, eye-tracking, and computational modeling
- **Neurocognitive psychologist** and **behavioral economist** focused on translational research
- **Hands-on experience** in conducting **clinical trials** and non-clinical, **behavioral experiments**
- Profound expertise in **statistics**, **computational modeling**, and **machine learning**
- Entrepreneurial spirit with **10-years industry experience** in the **financial sector and consulting**
- **Self-driven first-generation** academic and college student

## ACADEMIC BACKGROUND

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<b>Postdoctoral Researcher</b> , <i>Brown University</i> Providence, RI USA	2022 – present
Computational Psychiatry & Cognitive Neuroscience (Main Mentor: Michael J. Frank) Modeling expert on multiple clinical center grants for mood-related mental health disorders	
<b>PhD in Psychology and Neuroscience</b> , <i>The Ohio State University</i> (GPA: 3.95) <b>with Specialization: model-based cognitive neuroscience</b> Columbus, OH USA	2019 – 2022
Dissertation: Characterizing adult attention-deficit hyperactivity disorder (ADHD) with a multidisciplinary computational approach including novel neurocognitive testing and physiological measures. Advisor committee: Patricia Van Zandt, L. Eugene Arnold, Brandon Turner, Jay Myung	
<b>Master of Arts in Psychology</b> , <i>The Ohio State University</i> (GPA: 3.95) <b>with Specialization: cognitive psychology and neuroscience</b> Columbus, OH USA	2017 – 2019
Master's thesis: On the implementation of computational psychiatry within the framework of cognitive psychology and neuroscience. Advisor committee: Patricia Van Zandt, Roger Ratcliff, L. Eugene Arnold	
<b>Additional coursework in Psychology</b> , <i>University of Zurich</i> Zurich, Switzerland	2016 – 2017
Biological Psychology I & II, Neuroeconomics, Social Psychology I & II (Neuroscience, Immunology, Genetics, Epigenetics, Endocrinology)	
<b>Master of Arts in Economics</b> , <i>University of Zurich</i> (GPA: 3.53) <b>with Minor: behavioral and experimental economics</b> Zurich Switzerland	2015 – 2017
Graduation with honors: magna cum laude Master's thesis: Situational determinants of social preferences. Advisor: Ernst Fehr	
<b>Additional coursework in Mathematics</b> , <i>Swiss Federal Institute of Technology (ETH)</i> Zurich Switzerland	2014 – 2015
Real Calculus I & II, Linear Algebra I & II	
<b>Bachelor of Arts in Economics</b> , <i>University of Zurich</i> (GPA: 3.49) Zurich, Switzerland	2012 – 2014
Graduation with honors: magna cum laude Bachelor's thesis: Generosity across economic contexts. Advisor: Roberto A. Weber	
<b>Bachelor of Science in Business Administration</b> , <i>Zurich University of Applied Sciences (ZHAW)</i> Winterthur, Switzerland (GPA: A (best))	2008 – 2012
Graduation with honors: Dean's List Award in recognition of outstanding academic achievement Awarded with the Rieter-Award for the best Bachelor Thesis in 2012: "How corporate governance of a consultancy can benefit from findings in behavioral economics – How implicit incentive signals influence intrinsic motivation"	

<b>Industrial Psychology with Certificate from KLZ</b> , <i>Commercial Learning School (KLZ)</i> Zurich, Switzerland	2007 – 2008
<b>Human Resources Advisor with Certificate</b> , <i>AKAD School of Business</i> Zurich, Switzerland	2006 - 2007
<b>Apprenticeship with Vocational Baccalaureate Diploma</b> , <i>Graubündner Kantonalbank</i> Chur, Switzerland	2004 – 2007

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## PROFESSIONAL EXPERIENCE

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**BGBehavior LLC**, Providence, RI USA 02/2023 – present  
**Co-founder & CEO**

- Consulting in neurocognitive testing & computational modeling
- Developing multi-sided platform (*Violucid*) for clinicians, scientists, & users for accessible & proactive mental well-being

**Brown University**, Providence, RI USA 09/2022 – present

**Postdoctoral Researcher in Computational Psychiatry & Cognitive Neuroscience**

- Developing a novel neurocognitive task battery including cognitive and social-cognitive features
- Testing a unified modeling approach to characterize disorder-specific and transdiagnostic features across domains and over time
- Directing several independent research projects in the domain of computational psychiatry across disorders and across species
- Examining conflict-processing and intracranial EEG signatures of people with parkinson's disease (PD)

**The Ohio State University**, Columbus, OH USA 08/2017 – 08/2022

**PhD in Psychology and Neuroscience**

- Independently designing, programming, and piloting multiple cognitive and social-cognitive tasks to study cognitive control, cognitive flexibility, and social-cognitive behavior
- Independently collecting and analyzing behavioral, electroencephalographic (EEG) and eye-tracking data
- Class project: collecting and analyzing functional magnetic resonance imaging data (fMRI)
- Experience in administering laboratory tasks to clinical and non-clinical populations (adults and children)
- Experience in computational modeling and machine learning
  - Applying machine learning algorithms and sequential sampling models to link behavioral model parameters from neurocognitive tests with EEG data and eye-tracking data (gaze and pupil measures)
  - Analyzing experimental data (e.g., task performance on go/no-go tasks, perceptual discrimination tasks, task-switch paradigms, economic choice tasks) from non-clinical and clinical studies using diffusion decision models, race diffusion models, ballistic accumulator models, ex-Gaussian distribution models, and reinforcement learning models
  - Programming of neural networks to understand potential different causes of autism spectrum disorders
- Experience in clinical research
  - Assisting in a randomized clinical trial for neurofeedback treatment for childhood attention-deficit hyperactivity disorder
  - Performing biostatistical analyses (e.g., linear mixed modeling, moderator and mediator analyses) for various non-pharmacological interventions for ADHD and for a pharmacological intervention for autism spectrum disorder
  - Independently conducting semi-structured clinical interviews (K-SADS) after being trained by medical doctors
  - Independently collecting and evaluating responses on various clinical questionnaires after being trained by clinicians and medical doctors

<b>University of Zurich, Zurich, ZH Switzerland</b>	07/2013 – 01/2017
<b>Research Assistant (20-40% employment)</b>	
Chair of Behavioral Economics (Prof. Roberto Weber), Department of Economics	
<ul style="list-style-type: none"> <li>• Directing several independent research projects</li> <li>• Analyzing experimental and field data with STATA</li> <li>• Programming experiments with “z-Tree”</li> <li>• Assisting in designing and conducting experiments at the Economics Laboratory</li> <li>• Conducting literature research, surveys, field and online studies</li> </ul>	
<b>Swiss Federal Institute of Technology, ETH (20% employment)</b>	11/2013 – 07/2017
<b>Laboratory Assistant, Zurich, Switzerland</b>	
Decision Science Laboratory, Department D-GESS, Behavioral Studies	
<ul style="list-style-type: none"> <li>• Responsible for checking experiments programmed with z-Tree</li> <li>• Writing codes for PowerShell to run experiments</li> <li>• Independently conducting laboratory experiments</li> <li>• Assistance in conducting laboratory experiments</li> <li>• Helping others with programming experiments with “z-Tree”</li> </ul>	
<b>Statistical Bureau, City of Zurich (60% employment)</b>	
<b>Internship as Research Assistant, Zurich, Switzerland</b>	07/2013 – 09/2013
<ul style="list-style-type: none"> <li>• Data collection, preparation and statistical analysis (SAS &amp; Excel)</li> </ul>	
<b>Fehr Advice &amp; Partners AG (50% employment)</b>	03/2012 – 02/2013
<b>Junior Consultant &amp; Executive Assistant, Zurich, Switzerland</b>	
<ul style="list-style-type: none"> <li>• Junior Consultant in several client projects</li> <li>• supervision of 4 team assistants</li> </ul>	
<b>UBS AG (100% employment)</b>	07/2007 – 02/2012
<b>Client Advisor Assistant, Executives/Entrepreneurs Private Banking, Zurich, Switzerland</b>	03/2011 – 02/2012
<ul style="list-style-type: none"> <li>• Worked closely with specialists from Investment Banking</li> <li>• supported Client Advisors</li> </ul>	
<b>Individual Client Advisor, Rüslikon, Switzerland</b>	09/2008 – 02/2011
<ul style="list-style-type: none"> <li>• Managed own client book (business volume approx. CHF 140 Mio)</li> <li>• Deputy for branch manager &amp; trained apprentices in practice and in financial mathematics</li> </ul>	
<b>General Client Advisor, Zollikerberg, Switzerland</b>	07/2007 – 08/2008
<b>Graubündner Kantonalbank (100% employment)</b>	08/2004 – 06/2007
<b>Apprenticeship with Vocational Maturity Diploma, Chur, Switzerland</b>	

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## PUBLICATIONS

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### **Published Articles**

1. Ging-Jehli, N.R., Kraemer, H., Arnold, L.E., Roley-Roberts, M.E., deBeus, R. (2023). Latent cognitive components moderate neurofeedback response in ADHD – A computational modeling analysis of a randomized clinical trial. *Journal of Clinical and Experimental Neuropsychology*.
2. Roley-Robert, M.E., Bergman, R., Pan, X., Tan, Y., Hendrix, K., deBeus, R., Kerson, C., Arns, M., Ging-Jehli, N.R., Connor, S., Shrader, C., Arnold, L.E. (2022). Comorbid anxiety and disruptive behavior disorders but not ADHD presentation moderate neurofeedback effect in children with ADHD. *Applied Psychophysiology and Biofeedback*.
3. Ging-Jehli, N.R., Arnold, L.E., Roley-Roberts, M.E., deBeus, R. (2022). Characterizing underlying cognitive components of ADHD presentations and co-morbid diagnoses – A diffusion decision model analysis. *Journal of Attention Disorders*.
4. Ging-Jehli, N.R., Ratcliff, R., Arnold, L.E. (2021). Improving Neurocognitive Testing using Computational Psychiatry – A Systematic Review for ADHD. *Psychological Bulletin*.

5. Ging-Jehli, N.R., Ratcliff, R. (2020). Effects of aging in a task-switch paradigm with the diffusion decision model. *Journal of Psychology and Aging*.
6. Ging-Jehli, N.R., Deepa, M., Hollway J., Hurt, E., Moone, S., Arnold, L.E. (2020). Exploring cholesterol supplementation for autistic symptoms in Children with Low Cholesterol. *Journal of Developmental and Physical Disabilities*.
7. Ging-Jehli, N.R., Schneider, F.H., Weber, R.A. (2020). On self-serving strategic beliefs. *Journal of Games and Economic Behavior*.
8. Davis, A. L., Jehli, N.R., Miller, J.H., & Weber, R.A. (2015). *Generosity across contexts*. CESifo Working Paper, No. 5272, Center for Economic Studies and ifo Institute (CESifo), Munich.

### **Articles Under Review**

9. Ging-Jehli, N.R., Arnold, L.E., Sellers J., Van Zandt, T. (submitted). Broader visual processing and distinct pupil dynamics facilitate resolving perceptual conflict and compensate for ADHD distractibility.
10. Ging-Jehli, N.R., Arnold, L.E., Van Zandt, T. (submitted). Cognitive & attentional mechanisms of cooperation: implications for incentive designs and computational psychiatry.
11. Ging-Jehli, N.R., Painter, Q.A., Roley-Roberts, M., Panchyshyn, C., deBeus, R., Arnold, L.E. (submitted). Computational Modeling of the Cognitive Effects of Neurofeedback for ADHD and Interaction with Autistic Features.

### **Published Conference Abstracts**

1. Ging-Jehli, N., Arnold, L. E., Sellers, J., & Van Zandt, T. (2022). 30.3 Eye-Tracking, Gaze, and Pupil Dynamics in ADHD: Biofeedback Possibilities During Novel Perceptual Conflict Task. *Journal of the American Academy of Child & Adolescent Psychiatry*, 61(10), S323.
2. Painter, Q. A., Ging-Jehli, N., Arnold, L. E., Roley-Roberts, M. E., & Pan, X. J. (2022). 30.4 The Effect of ASD Features on Neurocognitive Change With Neurofeedback in ADHD: New ICAN Data. *Journal of the American Academy of Child & Adolescent Psychiatry*, 61(10), S323.
3. Roley-Roberts, M., Kerson, C., Ging-Jehli, N., & Pan, X. (2021). 30.2 Moderating Effects of Psychiatric Diagnoses on Neurofeedback for ADHD at 25-month Follow-up. *Journal of the American Academy of Child & Adolescent Psychiatry*, 60(10), S304.
4. Ging-Jehli, N., Arnold, L. E., deBeus, R., Roley-Roberts, M., & Kraemer, H. (2021). 30.4 Underlying Cognitive Components Respond to Neurofeedback For ADHD And Moderate Clinical Outcome. *Journal of the American Academy of Child & Adolescent Psychiatry*, 60(10), S305.
5. Arnold, L. E., Roley-Roberts, M. E., Ging-Jehli, N., Kerson, C., Pumphrey, K., & Loo, S. K. (2020, October). ADHD Neurofeedback 25-Month Follow-Up, Moderation of Response, and Neurocognitive Subtyping. In *2020 Virtual Meeting*. AACAP.

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### **CURRENT PROJECTS**

- Conflict-processing and intracranial EEG signatures of people with parkinson's disease (PD)
- A unified modeling approach to characterize disorder-specific and transdiagnostic features across cognitive domains and over time
- Computational phenotyping of major depressive disorders (MDD) and obsessive compulsive disorders (OCD) within Approach-Avoidance-Conflict Processing
- Neuronal and attentional signatures of attention-deficit/hyperactivity disorder (ADHD) within a novel cognitive flexibility task
- Applying the Diffusion Decision Model and Machine Learning Algorithms to the Neuropsychological Test Performances and EEG resting state activity in an ADHD Sample from the MTA study

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### **SELECTED PUBLIC OUTREACH AND PRESS RELEASES**

Interview on the weekly "Wellness Wednesday" show on "All Sides with Ann Fisher" - a live public affairs talk show on WOSU-NPR (89.7 FM) Radio in Columbus, Ohio. Link: [Radio Interview on Computational Psychiatry and ADHD - YouTube](#)

Interview with Psychiatry & Behavioral Health Learning Network (Magazine). Link: [Using Computational Models to Improve ADHD Diagnosis and Treatment \(hmpgloballearningnetwork.com\)](https://hmpgloballearningnetwork.com)

Press coverage in *The Science Times*. Link: [Computational Models Could Help Diagnose Children with ADHD | Science Times](#)

Press release: [A pursuit of better testing to sort out the complexities of ADHD \(osu.edu\)](#)

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### AD HOC JOURNAL REVIEWS (N≥22)

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Clinical EEG and Neuroscience; European Child & Adolescent Psychiatry; Frontiers in Psychology; Journal of Autism and Developmental Disorders; Journal of Cognitive Neuroscience; Molecular Psychiatry; Neuropsychology; Neuroscience and Biobehavioral Reviews; Science Advances; Psychological Medicine

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### RESEARCH GRANTS

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Swiss National Science Foundation for implementing independent research project 2023 – 2025  
“Using Computational Psychiatry to explore transdiagnostic features of neurodevelopmental- and mood-related disorders” (Amount: CHF 10,000), role: PI

Swiss National Science Foundation for implementing independent research project: 2019 – 2020  
“Using Computational Psychiatry for Phenotyping ADHD” (Amount: CHF 3,000), role: PI

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### HONORS AND AWARDS

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**Swiss National Science Foundation** Postdoc Fellowship, Switzerland 09/2023 – 09/2025  
(Amount: CHF 120,600)

**NIH** Computational Psychiatry Postdoctoral Fellowship (**T32**), Brown University, USA 12/2022 – 09/2023  
(Amount: USD 113,680)

**Presidential Fellowship**, The Ohio State University, USA 08/2021 – 08/2022  
(Amount: USD 40,000)

**Swiss National Science Foundation** Graduate Fellowship, Switzerland 01/2019 – 12/2020  
(Amount: CHF 93,725)

**University Fellowship**, The Ohio State University, USA 08/2017 – 08/2018  
(Amount: USD 20,000)

**Graduation with honor:** magna cum laude, University of Zurich, Switzerland 2017

**Graduation with honor:** magna cum laude, University of Zurich, Switzerland 2014

Named to the **Dean’s List** in recognition of outstanding academic achievements, Switzerland 2012

Awarded the **Rieter-Prize** for the best Bachelor Thesis in 2012, Switzerland 2012

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### ACADEMIC PRESENTATIONS (CONFERENCES AND INVITED TALKS)

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**Poster Presentation** “Broader visual processing and distinct pupil dynamics facilitate perceptual conflict and compensate for ADHD distractibility”, at the Mental Effort Workshop, Providence, RI (USA) 2022

**Oral Presentation** “Eye-tracking, Gaze, and Pupil Dynamics in ADHD: Biofeedback Possibilities during Novel Perceptual Conflict Task”, at the American Academy of Child and Adolescent Psychiatry (virtually), Toronto (CA) 2022

**Oral Presentation** “Addressing ADHD and comorbidities with computational psychiatry: using new integrative testing; refining clinical characteristics; and tailoring treatments”, at Brown University, USA 2022

**Oral Presentation** “Personalized medicine using computational psychiatry”, at the American Academy of Child and Adolescent Psychiatry (virtual due to COVID-19) 2021

<b>Oral Presentation</b>	“Neurocognitive subtyping of ADHD by Computational Psychiatry”, at the International Conference on ADHD by CHADD (virtual)	2020
<b>Oral Presentation</b>	“Using Computational Modeling as a Moderator Analysis to Understand the Benefits of Neurofeedback for ADHD”, at the American Academy of Child and Adolescent Psychiatry (virtual due to COVID-19)	2020
<b>Poster Presentation</b>	“Computational Psychiatry: Studying ADHD in neurocognitive tests”, at the Society for Neuroscience Conference, Chicago, IL (USA)	2019
<b>Oral Presentation</b>	“ADHD/ASD – A different way how to perceive the world”, at the Cincinnati Children’s Hospital Medical Center, USA	2019
<b>Poster Presentation</b>	“On the implementation of computational psychiatry to study ADHD”, at the Institute for Behavioral Medicine Research Conference, The Ohio State University, USA	2019
<b>Poster Presentation</b>	“Generosity across contexts” at the Social Norms and Institutions, International Conference at the Congressi Stefano Franscini (CSF) of ETH Zurich, Ascona, TI (CH)	2015

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### TEACHING

<b>Graduate Teaching Associate, The Ohio State University</b>	2021
Preparation and presentation of lectures, preparing syllabi, preparing homework and quizzes, supervision of group work, grading homework, assignments, tests and quizzes. The first two courses are undergraduate and graduate level courses. The last three courses are undergraduate level courses.	
PSYCH2220: Data Analytics in Psychology	
PSYCH5613H: Biological Psychiatry	
PSYCH5614: Cognitive Neuroscience	
PSYCH3331: Abnormal Psychology	
PSYCH4475: Psychology of The Self	

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### SUPERVISION OF UNDERGRADUATE AND GRADUATE STUDENTS

Advising graduate students (Pranavan Chanthrakumar, Quinn Painter) and undergraduate students (Qile Jiang, Swaraj Thaikandi) in computational modeling	09/2022 – 04/2023
Advising undergraduate research assistants (Karly Britt, Aditya Maroju, Prateek Palsule, Jacob Sellers) in the Van Zandt lab (mentoring in: conducting statistical analyses, collecting eye-tracking and EEG data, applying computational models, applying to graduate school)	08/2020 – 05/2022
Educating/mentoring research assistants (Shea Connor, Alex Lingel, Madeline Thomas, Catherine Panchyshyn) in the conductance of laboratory experimental paradigms (assistants from various labs)	02/2019 – 12/2019
Educating/mentoring research assistants (Justin Voyzey, Sam Stelnicki, Saarthak Gaur) in the conductance of eye-tracking studies (assistants from various labs)	01/2018 – 12/2018

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### UNIVERSITY AND COMMUNITY SERVICE

Modeling advisor for the open-source HDDM toolbox – helping resolving modeling issues through google-collab list	2022
Statistical advisor for medical and clinical students conducting statistical analyses in SPSS and R	2022
Volunteered multiple undergraduates with their application documents for PhD programs	2020-2022
Guest lecture in an undergraduate course: how to find research topics and how to apply for PhD programs	2021
Internal workshop for undergraduates: Using R to simulate data with the diffusion decision model	2019

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### PROFESSIONAL MEMBERSHIPS

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Psychonomic Society  
Society for Mathematical Psychology  
Society for Neuroscience  
Transcontinental Computational Psychiatry Workgroup (TCPW)  
Women of Mathematical Psychology

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### ADDITIONAL TRAINING

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<b>Med Tech Leadership</b> Program (6months), New England Medical Innovation Center	2022/2023
<b>Dynamic Causal Modeling</b> Workshop (2 days), Brown University	2022
<b>Computational Modeling</b> Workshop (2 weeks), Carney Center for Computational Brain Science	2022
<b>Modeling EEG Data</b> Workshop (2 weeks), Brainstorm EEG Challenge, Brown University	2022
<b>Foundation of Neuroscience I and II</b> , School of Medicine (1 year), Ohio State University	2018/2019
<b>Computational Psychiatry</b> Workshop (1 week), Zurich (Switzerland)	2019
<b>European Computer Driving License Certificate</b> (1 year), Chur (Switzerland)	2007
<b>Swiss IT Certificate</b> (1 year), Chur (Switzerland)	2007

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### PROGRAMMING & TECHNICAL PROFICIENCY

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Proficient in **R**; Advanced in **STATA**, **SPSS**, and **WinBUGS**, Knowledge in **SAS** and **JASP**  
Proficient in **MATLAB** (including toolboxes: **Psychtoolbox**, **Signal Processing**, **ERPLab**)  
Proficient in **z-Tree (programming language: C++)** ; a free program for real-time interactions used in laboratory economic experiments  
Proficient in conducting **eye tracking** studies using **eyelink** and **gazeport**  
Advanced in **Python**, **LATEX**, **Fortran**, **Stan**  
Advanced in working with operating systems: **Linux**, **IOS** (mac), and **Microsoft**  
Advanced in conducting **full-cap** electroencephalographic (**EEG**) studies  
Knowledge in writing **bash scripts**  
Knowledge in conducting **fMRI** studies

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### COMPUTATIONAL MODELING & MACHINE LEARNING PROFICIENCY

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Proficient in using of **different computational modeling packages: brms package for RStan, HDDM in Python, DMC in R, fast-DM, diverse inhouse codes in Matlab, Fortran and RStan (programming own functions)**  
Proficient in implementing different **computational models** (e.g., sequential sampling models, descriptive distribution models) within **Bayesian** and **Frequentist** frameworks  
Proficient in applying different **machine learning** algorithms (e.g., **support vector, clustering, logistic regression, neural networks, principal and independent component analyses**)

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### STATISTICAL PROFICIENCY

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Proficient in **multi-level linear mixed modeling** and **Bayesian hierarchical modeling**  
Proficient in **moderator** analyses and **mediator** analyses (particularly for randomized clinical trials)  
Proficient in **ANOVAs**, simple and multivariate **regressions**

Proficient in **Time Series Analyses**

Knowledge in **structural equation modeling** and **dynamic causal modeling**

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**LANGUAGE PROFICIENCY**

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**German** – Native (Swiss citizen)

**English** – Full Professional Proficiency (oral and written); First Certificate in English; TOEFL iBT English Diploma (reading: 29 of 30, speaking: 28 of 30, listening: 28 of 30, writing: 28 of 30, total score: 113)

**French** – Full Professional Proficiency (oral and written); DELF A1, A2, A3 and A4

**Italian** – Basic (oral and written), DELI-diploma