

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** who seeks to make a real-world impact with **translational research to help people manage their mental health**
- **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

- Postdoctoral Researcher, *Brown University*** 2022 – present
Providence, RI USA
Computational Psychiatry & Cognitive Neuroscience (Mentor: Michael J. Frank)
- PhD in Psychology and Neuroscience, *The Ohio State University*** (GPA: 3.95) 2019 – 2022
with Specialization: model-based cognitive neuroscience
Columbus, OH USA
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
- Master of Arts in Psychology, *The Ohio State University*** (GPA: 3.95) 2017 – 2019
with Specialization: cognitive psychology and neuroscience
Columbus, OH USA
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
- Additional coursework in Psychology, *University of Zurich*** 2016 – 2017
Zurich, Switzerland
Biological Psychology I & II, Neuroeconomics, Social Psychology I & II (Neuroscience, Immunology, Genetics, Epigenetics, Endocrinology)
- Master of Arts in Economics, *University of Zurich*** (GPA: 3.53) 2015 – 2017
with Minor: behavioral and experimental economics
Zurich Switzerland
Graduation with honors: magna cum laude
Master's thesis: Situational determinants of social preferences.
Advisor: Ernst Fehr
- Additional coursework in Mathematics, *Swiss Federal Institute of Technology (ETH)*** 2014 – 2015
Zurich Switzerland
Real Calculus I & II, Linear Algebra I & II
- Bachelor of Arts in Economics, *University of Zurich*** (GPA: 3.49) 2012 – 2014
Zurich, Switzerland
Graduation with honors: magna cum laude
Bachelor's thesis: Generosity across economic contexts.
Advisor: Roberto A. Weber
- Bachelor of Science in Business Administration, *Zurich University of Applied Sciences (ZHAW)*** 2008 – 2012
Winterthur, Switzerland (GPA: A (best))
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"

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

PROFESSIONAL EXPERIENCE

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

Postdoctoral Researcher in Computational Psychiatry and Cognitive/Social-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 (focus: major depressive disorders)
- 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

University of Zurich, Zurich, ZH Switzerland 07/2013 – 01/2017

Research Assistant (20-40% employment)

Chair of Behavioral Economics (Prof. Roberto Weber), Department of Economics

- Directing several independent research projects
- Analyzing experimental and field data with STATA
- Programming experiments with “z-Tree”
- Assisting in designing and conducting experiments at the Economics Laboratory

- Conducting literature research, surveys, field and online studies

Swiss Federal Institute of Technology, ETH (20% employment) 11/2013 – 07/2017
Laboratory Assistant, Zurich, Switzerland

Decision Science Laboratory, Department D-GESS, Behavioral Studies

- Responsible for checking experiments programmed with z-Tree
- Writing codes for PowerShell to run experiments
- Independently conducting laboratory experiments
- Assistance in conducting laboratory experiments
- Helping others with programming experiments with “z-Tree”

Statistical Bureau, City of Zurich (60% employment) 07/2013 – 09/2013
Internship as Research Assistant, Zurich, Switzerland

- Data collection, preparation and statistical analysis (SAS & Excel)

Fehr Advice & Partners AG (50% employment) 03/2012 – 02/2013

Junior Consultant & Executive Assistant, Zurich, Switzerland

- Junior Consultant in several client projects
- supervision of 4 team assistants

UBS AG (100% employment) 07/2007 – 02/2012

Client Advisor Assistant, Executives/Entrepreneurs Private Banking, Zurich, Switzerland 03/2011 – 02/2012

- Worked closely with specialists from Investment Banking
- supported Client Advisors

Individual Client Advisor, Rüslikon, Switzerland 09/2008 – 02/2011

- Managed own client book (business volume approx. CHF 30 Mio)
- Deputy for branch manager & trained apprentices in practice and in financial mathematics

General Client Advisor, Zollikerberg, Switzerland 07/2007 – 08/2008

Graubündner Kantonalbank (100% employment) 08/2004 – 06/2007

Apprenticeship with Vocational Maturity Diploma, Chur, Switzerland

PUBLICATIONS

Published Articles

1. 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*.
2. 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*.
3. Ging-Jehli, N.R., Ratcliff, R., Arnold, L.E. (2021). Improving Neurocognitive Testing using Computational Psychiatry – A Systematic Review for ADHD. *Psychological Bulletin*.
4. 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*.
5. 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*.
6. Ging-Jehli, N.R., Schneider, F.H., Weber, R.A. (2020). On self-serving strategic beliefs. *Journal of Games and Economic Behavior*.
7. 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

8. 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.
9. Ging-Jehli, N.R., Arnold, L.E., Van Zandt, T. (submitted). Cognitive & attentional mechanisms of cooperation: implications for incentive designs and computational psychiatry.
10. Ging-Jehli, N.R., Kraemer, H., Arnold, L.E., Roley-Roberts, M.E., deBeus, R. (submitted). Latent cognitive components moderate neurofeedback response in ADHD – A computational modeling analysis of a randomized clinical trial.
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.

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
- Neurocognitive study using own developed cognitive flexibility paradigm and a new joint-modeling approach to integrate behavioral responses, eye tracking, and EEG
- 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

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 \(hmpglobelearningnetwork.com\)](#)

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 \(osu.edu\)](#)

AD HOC JOURNAL REVIEWS (N≥21)

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

RESEARCH GRANTS

Swiss National Science Foundation for implementing own research project “Using Computational Psychiatry to explore transdiagnostic features,” (Amount: CHF 10,000), role: PI	2023 – 2025
Swiss National Science Foundation for implementing own research project “Computational Psychiatry,” (Amount: CHF 3,000), role: PI	2019 – 2020

HONORS AND AWARDS

Swiss National Science Foundation Postdoc Fellowship, Switzerland (Amount: CHF 120,600)	09/2023 – 09/2025
NIH Computational Psychiatry Postdoctoral Fellowship (T32), Brown University, USA (Amount: USD 113,680)	12/2022 – 12/2024
Presidential Fellowship , The Ohio State University, USA (Amount: USD 40,000)	08/2021 – 08/2022
Swiss National Science Foundation Graduate Fellowship, Switzerland (Amount: CHF 93,725)	01/2019 – 12/2020
University Fellowship , The Ohio State University, USA (Amount: USD 20,000)	08/2017 – 08/2018
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

ACADEMIC PRESENTATIONS (CONFERENCES AND INVITED TALKS)

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
Oral Presentation “Neurocognitive subtyping of ADHD by Computational Psychiatry”, at the International Conference on ADHD by CHADD (virtual)	2020
Oral Presentation “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
Poster Presentation “Computational Psychiatry: Studying ADHD in neurocognitive tests”,	2019

at the Society for Neuroscience Conference, Chicago, IL (USA)

- Oral Presentation** “ADHD/ASD – A different way how to perceive the world”, 2019
at the Cincinnati Children’s Hospital Medical Center, USA
- Poster Presentation** “On the implementation of computational psychiatry to study ADHD”, 2019
at the Institute for Behavioral Medicine Research Conference,
The Ohio State University, USA
- Poster Presentation** “Generosity across contexts” at the Social Norms and Institutions, 2015
International Conference at the Congressi Stefano Franscini (CSF) of
ETH Zurich, Ascona, TI (CH)

TEACHING

- Graduate Teaching Associate, The Ohio State University** 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

SUPERVISION OF UNDERGRADUATE AND GRADUATE STUDENTS

- Advising graduate students (Pranavan Chanthrakumar, Quinn Painter) and undergraduate students (Qile Jiang, Swarag Thaikkandi) in computational modeling 09/2022 – present
- 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

UNIVERSITY AND COMMUNITY SERVICE

- Modeling advisor for the open-source HDDM toolbox – helping resolving modeling issues through google-collab list 2022-current
- 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
- Guest lecture as a volunteer at the high school in Pfaffikon, ZH (Switzerland). Topic: “What is Macroeconomics and how to handle money responsibly?” 2011

PROFESSIONAL MEMBERSHIPS

Psychonomic Society
Society for Mathematical Psychology

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

ADDITIONAL TRAINING

Dynamic Causal Modeling as part of the Mental Effort Workshop (2 days), Brown University	2022
Computational Modeling Workshop (2 weeks), Carney Center for Computational Brain Science	2022
Modeling EEG data (2 weeks), Brainstorm EEG Challenge, Brown University	2022
Foundation of Neuroscience I and II at the school of medicine (1 year), Ohio State University	2018/2019
Computational Psychiatry Workshop (1 week), Zurich (Switzerland)	2019
European Computer Driving License Certificate (1 year), Chur (Switzerland)	2007
Swiss IT Certificate (1 year), Chur (Switzerland)	2007

PROGRAMMING & TECHNICAL PROFICIENCY

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

COMPUTATIONAL MODELING & MACHINE LEARNING PROFICIENCY

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**)

STATISTICAL PROFICIENCY

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**

LANGUAGE PROFICIENCY

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