

Raphael Geddert

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LinkedIn: [rmgeddert](#) | GitHub: [rmgeddert](#) | Portfolio: <https://rmgeddert.github.io/>

EDUCATION

Duke University **2019 – 2024 (Expected)**
Ph.D. in Computational and Cognitive Neuroscience GPA: 3.98
M.A. – May 2022

University of California, Davis **2013 – 2017**
B.S. – Neurobiology, Physiology, & Behavior GPA: 3.97
B.A. – Psychology

SKILLS

Modeling: Reinforcement Learning • Drift Diffusion Models • Bayesian MLE • Model Comparison (LOO Cross-Validation, BFs, PPCs, AIC/BIC) • Linear/Logistic Regression • Classifiers (Deep NNs, Multiclass LogReg, Random Forest) • Linear Mixed Effects • SEM • Parametric/Nonparametric (GLM, permutation)

Programming: Python (*Packages:* np, pd, Scipy, Scikit-learn, PLT/Seaborn, PyTorch, TensorFlow, Keras; *Tools:* Conda, Jupyter, GPUs) • R (*Packages:* tidyverse, rstan, lmer, brms, tidybayes, rtdists, rwiener; *Tools:* Rmarkdown, RStudio, Shiny) • Javascript/HTML/CSS (Backend/Frontend Development, Node.js, jQuery, Underscore, Canvas, SVG) • Stan • SQL (SQLite) • Git • Bash • PHP

Soft: Exceptional instructor with strong presentation and communication skills, strong analytic skills

WORK HISTORY

For other completed and ongoing work, visit my [portfolio](#).

Ph.D. Student Researcher (Duke University) **2019 - Present**

- Designed and analyzed independent research project on cognitive control and task switching with Bayesian and frequentist statistics ([first-author publication](#))
- Designed and fit hierarchical reinforcement learning models for human transfer learning of card sorting rules ([preprint](#)) and combined with drift diffusion modeling to model cognitive flexibility (in prep).
- Ran nonparametric and linear models on intercranial EEG time series data from self-designed attentional set shifting task in patients with Epilepsy at Duke Hospital (in prep).
- Created online tutorials on [RL parameter estimation](#), [Qualtrics](#), Drift Diffusion Modeling, Javascript.
- Teaching Assistant for *Research Methods and Statistics for Psychological Science* (3 semesters).
- Co-Instructor for the Cognitive Neuroscience Research Internship's Python Programming Course.
- Presented independent research at the Cognitive Neuroscience Society, Society for Neuroscience, Psychonomic Society, and numerous department colloquia and journal clubs.
- Completed personal data science projects, such as a minimax chess engine and neural net classifiers.

Clinical Trial Coordinator and Data Analyst (UC Davis) **2017 - 2019**

- Head coordinator for large million-dollar longitudinal clinical trial studying cognitive control in ASD.
- Optimized data accessibility by independently designing large data querying software using VBA.
- Lead analyst for project using SEM and latent profile analysis exploring ASD subtypes ([publication](#)).
- Analyzed fMRI to identify neural activations and functional connectivity patterns related to memory in ASD ([publication](#)).

CERTIFICATES

For a complete list, see rmgeddert.github.io/certificates/

- Introduction to Deep Learning (ECE 655D) – Duke University In Progress
- NeuroMatch Academy – Computational Neuroscience Summer 2021
- NeuroMatch Academy – Computational Neuroscience Summer 2020