

## Brian Gereke, Ph.D.

Portland • OR | 520-256-9613 | [bgereke@utexas.edu](mailto:bgereke@utexas.edu)  
[github.com/bgereke](https://github.com/bgereke) | [linkedin.com/in/brian-gereke](https://linkedin.com/in/brian-gereke)

### Summary

---

Neuroscience PhD with 10 years of experience designing experiments and building custom data preprocessing, statistical modeling, and visualization pipelines for complex rodent behavior and neurophysiology datasets. Practical hands-on experience in machine learning and computer vision. Passion for writing organized, documented, and testable code in Python and R in order to extract sharable, repeatable, and actionable knowledge from data. Ability to self-manage difficult projects from conception to completion and effectively communicate results to technical and nontechnical audiences.

See publications: <https://www.ncbi.nlm.nih.gov/pubmed/?term=Brian+gereke>

### Skills

---

- **Python** (5 yrs): numpy, pandas, scikit-learn, statsmodels, scipy, pyspark, opencv, tkinter, flask, multiprocessing, sphinx, scrapy, unittest, pytest, fastapi, etc.
- **R** (5 yrs): base + tidyverse, DBI, mgcv, glmnet, rgl, etc.
- **Arduino** (2 yrs) | **Matlab** (10 yrs) | **JavaScript** | **SQL** | **C++** | **Git** | **Spark** | **XGBoost** | **TensorFlow/PyTorch** | **Faiss** | **Docker** | **Kubeflow**
- Experiment design | statistics (parametric, nonparametric, multivariate, etc.) | signal processing | spatio-spectro-temporal analysis | GLMs | gradient boosted trees | SVMs | CNNs | dimensionality reduction | clustering | point processes | reinforcement learning | representation learning | approximate nearest neighbors

### Experience

---

#### Postdoctoral Researcher | Berkeley National Lab 2018–present

- Built, deployed and maintained an object-oriented, multi-process, gpu-accelerated application for real-time control of a robotic experimental data acquisition system using Python, R and Arduino.
- Led a team in creating a markerless behavior tracking system from multi-view video data using a tensorflow package (DeepLabCut).

#### Graduate Student Researcher | University of Texas at Austin 2012–2018

- Utilized HPC resources to perform embarrassingly parallel analyses of large scale rodent hippocampal neural spiking and local field potential data using generalized additive mixed models in R, Matlab and Python.
- Developed novel predictive point process models for sparse time-frequency representations with applications to hippocampal field potential data.
- Spearheaded data aggregation, cleansing, and feature engineering tasks using Matlab, R and Python.

### Education

---

#### PhD, University of Texas at Austin | Neuroscience 2012-2018

Thesis: Experience-dependent trends in hippocampal theta and gamma rhythms

#### BS, University of Arizona | Applied Mathematics 2007-2012