

Peter David Smits

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<https://psmits.github.io/>

Experience

- **University of California – Berkeley** Berkeley, CA
Postdoctoral Scholar *Sept 2017 – present*
 - Executed multiple projects about predicting when rare events (e.g. extinctions) are likely to be clustered
 - Developed a discrete-time survival model for predicting extinction from highly structured data
 - Used results from this survival model to estimate the accuracy of predicting future extinction events
 - Analyzed how sedimentological composition predicts the occurrence of rare events (e.g. fossils) using a time-series mixture model
 - Taught graduate level course on applied statistics, Bayesian modeling, and network analysis using R and Stan
- **University of Chicago** Chicago, IL
Doctoral Researcher *Sept 2012 – June 2017*
 - Completed dissertation on Bayesian modeling of multi-level variation in species duration with incomplete observation
 - Analyzed cohort-structured survival data using a multi-level model accounting for multiple forms of nonindependence in the observations
 - Developed a hidden Markov model of species duration and their occurrences over time with incomplete observation probability
 - Mentored and taught graduate and undergraduate students in statistics, Stan, R, and pedagogy
- **Monash University** Melbourne, AUS
Postgraduate Researcher *Sept 2010 – Aug 2012*
 - Developed thesis on the relationship between tooth shape and jaw movement in carnivorous mammals
 - Used three-dimensional scans of mammal skulls to reconstruct jaw movement
 - Used R to analyze relationship among biomechanical measurements
 - Demonstrated for undergraduate course on introduction to data analysis and R

Education

- **University of Chicago** Chicago, IL
Ph.D. in Evolutionary Biology *Sept 2012 – June 2017*
- **Monash University** Melbourne, AUS
M.Sc. in Biological Sciences *Sept 2010 – Aug 2012*
 - Vice-Chancellor's Commendation for Master's Thesis Excellence
- **University of Washington** Seattle, WA
B.S. in Biology – Ecology and Evolution *Sept 2006 – June 2010*

Technical Skills

Statistical/Analytical: Bayesian data analysis, multilevel/hierarchical/mixed-effects models, generalized linear models, time-series analysis, survival analysis, longitudinal and cross-sectional data analysis, discrete-time hidden Markov models, network analysis/graph theory, exploratory data analysis, clustering and classification, machine learning (e.g. random forests), measurement error/missing data, variable selection, etc.

Technologies: R (caret, devtools, ggplot2, knitr, igraph, parallel, tidyverse, shiny), Stan, JAGS, L^AT_EX, git/github, bash/Linux command line

Other: near-fluency French, dual US–Australian citizen, radio experience