Sean C. Martin

Contact Information:

LOCATION: Oakland, California
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Education:

PhD, Linguistics New York University (September 2015)
Research focused on speech perception, computational models of cognitive processes, and quantitative methods in behavioral research.

BA, Linguistics University of California, Los Angeles (May, 2008)

Skills:

Programming Languages: R, Python (numpy, scipy, pandas, scikit-learn), SQL, Haskell, Julia, Octave/Matlab, Stan.

Data Analysis/Machine Learning: Linear and generalized linear models for regression and classification, data visualization, Bayesian modeling, time-series, decision trees/random forests, supervised and unsupervised clustering models, density estimation, online learning methods.

Experimental Design: Experimental design for a/b testing and multivariate designs, power analysis.

Experience:

Consultant (9/2015-present)
Consulting on data analysis and experimental design for social and cognitive science researchers.

Lab Manager NYU Phonetics and Experimental Phonology Lab (5/2011-9/2015)
Developed data collection and analysis pipelines, provided computational support for students and faculty.

Research Assistant NYU Department of Linguistics (5/2011-8/2014)
(PIs Lisa Davidson and Colin Wilson) Project investigating phonetic and phonological factors in non-native speech perception.

Sample Projects:

Ultrasound analysis pipeline: Assisted in re-building NYU PEP Lab's pipeline for processing and analyzing tongue-shape data, streamlining an existing procedure and modifying components to take advantage of improvements in available software. Replaced complex scripts with higher-level user-friendly interface covering standard use cases and where possible migrated to open-source tools freely available to students. (see github.com/NYU-PEP)

Data Analysis:, Assisted researcher Nicole Holliday (NYU) in design and implementation of statistical analysis of speech data for a study of how speakers use socio-linguistic features to construct and present ethnic identity. Iterated analysis from initial data collection and exploratory analysis to building Bayesian model of individual behavior variability.

Data Analysis and Experimental Design: Assisted in design of behavioral experiment examining perceptual errors among speakers of Mandarin, Cantonese, Japanese, and Korean. Designed an automated data processing and analysis pipeline to process raw experimental output, fit a multinomial logistic regression model to the data, and generate visualizations based on data and model.

Selected Publications:

Davidson, Lisa, Sean Martin, and Colin Wilson (2015) *Stabilizing the production of nonnative consonant clusters with acoustic variability.* Journal of the Acoustical Society of America, vol. 137 pp. 856-872

Wilson, Colin, Lisa Davidson, and Sean Martin *Effects of acoustic-phonetic detail on cross-language speech production.* Journal of Memory and Language, vol. 77, pp. 1-24