**Ning Mei**

**Basque Center on Cognition, Brain and Language – David Soto Group**

**n.mei@bcbl.eu or nm2241@nyu.edu**

**Website: https://github.com/nmningmei**

**Open Science Framework: https://osf.io/chav7/**

## EDUCATION

2018 (in progress)

| Basque Center on Cognition, Brain, and Language

P.h.D in Cognitive Neuroscience

2016

| New York University, New York, NY

M.A in Psychology (General)

2014

| Arizona State University, Tempe, AZ

B.A. in Psychology (minor in Statistics)

2012

| Guangzhou University of Traditional Chinese Medicine, Guangzhou, China

B.S. in Applied Psychology

## PUBLICATIONS and CONFERENCE POSTERS

**Posters**

Teng, X., Mei, N., Tian, X., & Poeppel, D. (2016). Auditory temporal windows revealed by locally reversing Mandarin speech. *Society for Neurobiology of Language,* Poster (co-first-author), Cognitive Neuroscience Society, 2016

Kim, T., Mei, N., Poeppel, D., & Flinker, A. (2015). A new acoustic space for hemispheric asymmetries. *Society for Neurobiology of Language,* Poster (co-first-author), Society for Neuroscience, 2015

Mei, N., Sheikh, U., Santana, R., & Soto, D. (2019, September). How the brain encodes meaning: Comparing word embedding and computer vision models to predict fMRI data during visual word recognition. Cognitive *Computational Neuroscience Conference*, Berline, Germany.

Mei, N., & Soto, D. (2019, September). Predicting human prospective beliefs and decisions to engage using multivariate classification analyses of behavioural data. *Cognitive Computational Neuroscience Conference*, Berline, Germany.

**Publication**

Ning Mei, Michael Grossberg, Kenneth Ng, Karen Navarro, and Timothy Ellmore. Identifying sleep spindle with multi-channel EEG and classification optimization. Biology and Medicine. (2017)

Timothy Ellmore, Chelsea Reichert, Kenneth Ng, and Ning Mei, Visual continuous recognition reveals widespread cortical contributions to scene memory. (under review)

Timothy Ellmore, Michael Grossberg, Karen Navarro, Kenneth Ng, and Ning MeiA high-density scalp EEG dataset acquired during brief naps after a visual working memory task. (2018)

Mei, N., Flinker, A., Zhu, M., Cai, Q., and Tian, X. (2020). Lateralization in the dichotic listening of tones is influenced by the content of speech. *Neuropsychologia*. https://doi.org/10.1016/j.neuropsychologia.2020.107389

Mei, N., Grossberg, M., Navarro, K., Ng, K., and Ellmore, T. (2018), A high-density scalp EEG dataset acquired during brief naps after a visual working memory task. *Data Brief*. 18:1513-1519. doi: 10.1016/j.dib.2018.04.073

Ning Mei, Sean Rankine, Einar Olafsson, David Soto. (under review). Machine learning predicts human prospective decision making. BioAxiv, doi: https://doi.org/10.1101/607069

## AWARDS

| | |
|---|---|
| Arizona State University, Dean's list | 2013, 2014 |
| Data Science RoAD-Trip (fellowship awarded) | 2016 |

## Research and Internships

Spring 2018 – present

**David Soto lab**

- *Doctoral researcher*
  Running psychophysics experiments, fMRI experiments, data analysis Ongoing project:
  - Decoding semantic categories of nouns via fMRI
  - Decoding semantic categories of masked images via fMRI
  - Decoding semantic categories of masked images via EEG
  - Decoding serial dependency of confidence ratings using RNN
  - Decoding metacognition decisions from previous attributions
  - Encoding analysis of semantic categories of nouns and masked images
  - Properties of unconscious processing

Fall 2014 – Spring 2018

**David Poeppel lab**

- *MA research assistant*
  Running psychophysics experiments, MEG experiments, data analysis
  Ongoing project: Investigating hemispheric asymmetry in perceiving

Mandarin Tones, in conditions of hums or lexical tones.
github.com/nmningmei/Dichotic-Listening

Spring 2015 – Fall 2016

**Catherine Good lab**

- *MA research assistant*
  Experimental subject testing, data collection, data analysis
  Data analysis on how sense of belonging in math moderating self-estimation in different confidence

levels Spring 2016 – Spring 2018

**Timothy Ellmore lab**

- *MA research assistant*
  Develop python/Matlab Input/Output interacting scripts/protocol for EEG data processing
  Selecting features to detect target brain wave patterns (i.e. spindles, k-complex, sleeping stages) in the signal
  Automatic pipeline of non-supervised models to detect spindles

  (https://osf.io/fc3u5/; github.com/nmningmei/modification-pipelines)

Fall 2016 – Fall 2018
**Data Science RoAD-Trip (Fund awarded, $4000)**

- The RoAD-Trip Joint Data Science Plan (Mentor: Gaurav Pandey)
- Implementing machine learning algorithms to detect target brain wave patterns (i.e. spindles, k-complex)
- Implementing machine learning algorithm to classify sleeping stages within subjects (github.com/nmningmei/Spindle_by_Graphical_Features)

Spring 2017 – Spring 2018

**Denis Pelli lab**

- *Research assistant*
  Study of noise dynamic in visual grouping effect

Spring 2014

**American Cancer Society Cancer Prevention Study – 3**

- *Volunteer, Research assistant*
  Recruiting subjects, social media research

Fall 2012-Summer 2014

**ASU Changemaker center, Tempe, AZ**

- *Volunteer*
  Creating communities of support around new solutions/ideas

Fall 2009, Spring 2010

**Canton Life Hot Line, Guangzhou, China**

- *Intern*
  Consulting, recording consulting results

Fall 2010, Spring 2011

**Research team, prisoner emotional health, Guangzhou, China**

- *Intern*
  Collecting data about prisoners' mental health

## Working experience

Fall 2012 to present

**Varsity Tutor**

- *Tutor*
  Multivariate Calculus, Linear Algebra, Trigonometry (high school and college levels), Statistics (i.e. research methods, analysis methods, simulation, signal detection theory), Mandarin, Programming data analysis

March 2013 to present

**Translator**, MCC Translation, Phoenix, AZ

## SKILLS and CERTIFICATIONS

**Computer Skills:**

Excellent – Microsoft Office

Word, Excel, Presentation, Poster Design

Excellent – Matlab

Parametric tests, Nonparametric tests, Factorial analysis, Principle Component Analysis, Psychophysics Toolbox, Signal Processing Toolbox, Data Visualization, Scripts of Functions.

**Excellent – Python**

Parametric tests, Nonparametric tests, Factorial analysis, Principle Component Analysis, Bayesian Modeling, Cross Validation Model Evaluation, Data Visualization, Lambda Functions, Extensions of Python such as MNE-python (specialize in EEG, MEG data analysis), Sci-kit learn, Pandas, Theano, Tensorflow (Keras), Pytorch, and PyMC3, Import and export excel, matlab, SPSS, and SAS files to Pythonic data frames. Extract, transform, and load datasets, Psychophysics experiment via PsycoPy, Deep Neural Network Modeling

Excellent – SPSS

Parametric tests, Nonparametric tests, Factorial Analysis, Principle Component Analysis, Independent Component Analysis

Excellent – R

Parametric tests, Nonparametric tests, Factorial Analysis, Principle Component Analysis, probabilistic computation Shiny – interactive graphs
ggplot, data visualization

Good – Letax Editor

Equations and special effects in presentation slides, posters

Beginner – Julia

Julia ikernel interacting with Jupyter projects

**Skills:**

- Courses taken: Calculus/Analytic Geometry I – III, Probability, Mathematical statistics, Simulation and Data Analysis, Mathematical Tools for Psychology and Neuroscience

**Statistics Skills:**

- Parametric statistics, Non-parametric statistics, Factorial Analysis, Principle Component Analysis, Independent Component Analysis, Least square regression, Multivariate regression, Step-wise hierarchical regression, Logistic regression, Bayesian Inference, Machine Learning Cassification(python sci-kit learn, Theano, tensorflow, pytorch).

**Language:**

- Mandarin
- Cantonese, mother tongue
- English