

# SEBASTIAN C. WAZ

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## EDUCATION

**B.S. – Cognitive Science and Computing**, UCLA (2016)

**M.S. – Statistics**, UC Irvine (2019, expected)

**Ph.D. – Cognitive Neuroscience**, UC Irvine (2022, expected)

Coursework: stats theory, generalized linear models, longitudinal data analysis, Bayesian inference, stats consulting, neural networks, PDEs, computer architecture, software construction, operating systems design, automata theory

## SKILLS

- |             |          |          |                |         |
|-------------|----------|----------|----------------|---------|
| • R and Rmd | • R2jags | • MATLAB | • SPSS         | • C/C++ |
| • Python    | • NumPy  | • Keras  | • scikit-learn | • NLTK  |

## WORK HISTORY

*GIS Analyst*, Easter Island Statue Project (July 2016 – September 2017)

- Wrote Python modules for handling ETL and geospatial analysis (e.g. least-cost pathing, clustering) in ArcGIS
- Worked with a MySQL database of archaeological records (images, text, GPS coordinates) spanning 4000+ sites
- Used Natural Language Toolkit (NLTK) to identify mentions of objects of interest in historical field notes

*Project Manager*, UCLA Unmanned Aerial Systems (July 2014 – July 2015)

- Revived defunct student project; team competed in the 2015 SUAS Competition and is now a regular competitor
- Managed funding and advisory relations with Nextgen Aeronautics and Northrop Grumman Corporation
- Exercised risk management: developed contingency plans to mitigate harm and maximize system survivability

## RESEARCH

*Graduate Student*, Chubb-Wright Lab, UC Irvine (Fall 2017 – present)

- Developed neurodynamic model for computing visual statistics under realistic physiological constraints (associated manuscript in preparation):

**Waz, S., Chubb, C. (2018, September). Laterally connected neural field provides precise centroid estimates. Poster presented at the 2<sup>nd</sup> Computational Cognitive Neuroscience (CCN) Conference in Philadelphia, PA.**

*Independent Researcher*, Zili Liu Computational Perception Lab, UCLA (Summer 2014 – present)

- Awarded \$2,000 research scholarship by the Psychology Research Opportunities Program (PROPS)
- Applied signal detection theory to research in visual perception:

**Song, X., Waz, S., & Liu, Z. (2015, May). Boundary Extension: Insights from Signal Detection Theory. Poster presented at the 24<sup>th</sup> Annual Psychology Undergraduate Research Conference (PURC) at UCLA.**

## PROJECTS

*Unsupervised learning of musical genres*, Psych 186C: Neural Networks (Winter 2016)

- Wrote backpropagation NN and Kohonen self-organizing map (SOM) algorithms in MATLAB
- Used LabROSA Million Song Database to generate time-series features for 10,000 song dataset
- Successfully automated genre clustering (78% purity, 4 genres) and classification (80% accuracy, 4 genres)

*Distilling play strategies from NN agents*, CS 188: AI Playing Games (Spring 2016)

- Used unsupervised learning (JavaML) to cluster 100,000+ game-states from AI agent runs of Super Mario
- Wrote a tailored Q-learning algorithm to reduce neural network (NN) behavior to state-action strategies
- Q-learning agent retained basic behaviors of NN supervisor, represented behaviors in human-readable format