**SEBASTIAN C. WAZ**

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**EDUCATION**

**University of California, Los Angeles**  
B.S. in Cognitive Science and Computing (Class of 2016)

Coursework: generalized linear models, Bayesian data analysis, signal detection theory, neural networks,  
AI playing games, automata theory, software construction, operating systems design, computer architecture

**SKILLS**

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

**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
* Audited and updated MySQL database of archaeological records (image and text) spanning 4000+ sites
* Used Natural Language Toolkit (NLTK) to identify mentions to objects of interest in historical field notes

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

* Secured $10,000 grant from Northrop Grumman Corporation for student project in computer vision and avionics
* Exercised risk management: developed contingency plans to mitigate harm and maximize system survivability
* Grew club membership by 500%; team competed in the 2015 Student Unmanned Aerial Systems Competition

**PROJECTS**

***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

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

* Scripted 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)

***Personal projects***

* Generating hip hop beats procedurally in Python (Pyo) using Bayesian and neural network models
* Wrote, produced, and marketed *Analogies*,an independent music record (see: analogies.thatsebas.com)

**RESEARCH**

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

* Developed neural fields model for the computation of pre-attentive visual statistics (manuscript in preparation)

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

* Applied signal detection theory to research in visual perception:

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

* Awarded $2,000 research scholarship by the Psychology Research Opportunities Program (PROPS)