SEBASTIAN C. WAZ

951.741.8079 sebwaz.com 7422 Palo Verde Road
swaz@uci.edu Irvine, CA 92617

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, research methods, neural networks, AI playing games, software construction, operating systems design, computer architecture

SKILLS

- Python
- NumPy
- Keras
- scikit-learn
- NLTK
- R and Rmd
- R2jags
- SPSS
- MATLAB
- 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)