SEBASTIAN C. WAZ

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EDUCATION

University of California, Los Angeles
B.S. in Cognitive Science and Computing (Class of 2016)
Coursework: software construction, client/service interface, operating systems design, computer architecture, research methods, statistics, probability theory, perception in technology, AI playing games, machine learning

SKILLS

- C/C++
- Java
- Python
- Bash
- JavaScript
- HTML/CSS
- Lua
- C#
- SPSS
- R
- MATLAB
- MySQL

ROLES

Data Analyst, Easter Island Statue Project and UCLA Rock Art Archive (July 2014 – present)
- Write Python modules for handling ETL and spatial queries (e.g. least-cost pathing, polygon intersection)
- Audit and update Drupal image and geospatial database (MySQL) of 4000+ sites
- Exercise design skill in building interactive maps, data visualizations, and database taxonomies

Project Manager, UCLA Unmanned Aerial Systems (July 2014 – July 2015)
- Secured $10,000 grant from the Northrop Grumman Corporation for work in computer vision and avionics
- Grew club membership by 500%, competed in the AUVSI 2015 Student Unmanned Aerial Systems Competition
- Exercised risk management: developed contingency plans to mitigate harm and maximize system survivability

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 specialized Q-learning algorithm to translate neural network ("NN") behavior into state-action strategies
- Developed successful Q-learning AI agent, reducing complexity from NP to P with comparable performance

Unsupervised learning of musical genres, Psych 186C: Neural Networks (Winter 2016)
- Wrote Kohonen self-organizing map ("SOM") in MATLAB to cluster songs into genres (78% purity, 4 genres)
- Conducted ETL from LabROSA Million Song Database to generate input features
- Wrote backpropagation NN, trained on same dataset: compared classification accuracy against SOM group purity

Personal projects
- Refining recurrent NN architecture in Python to generate drum sequences in MIDI
- Wrote, produced, branded, and marketed an independent music record (see: analogies.thatsebas.com)

RESEARCH

Independent Researcher, Zili Liu Computational Perception Lab, UCLA (Summer 2014 – present)
- Applied Signal Detection Theory to visual perception; presented significant ($p < 0.01$) results:

    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.

- Conducted multi-voxel pattern analysis of fMRI data using LIBSVM for MATLAB
- Built scripts in MATLAB and Python to animate visual stimuli, take user input, and automate data analysis
- Awarded $2,000 research scholarship by the Psychology Research Opportunities Program (PROPS)