SEBASTIAN C. WAZ

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EDUCATION

University of California, Los Angeles

B.S. in Cognitive Science and Computing (Class of 2016, GPA 3.26, Major GPA 3.46)
Relevant coursework: data structures, complexity and optimization, sorting, compression, operating systems design, computer architecture, machine learning, signal detection theory, research methods, statistical analysis, probability

SKILLS

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

ROLES

GIS Analyst, Easter Island Statue Project and UCLA Rock Art Archive (July 2014 – present)

- Write Python modules for handling spatial queries (e.g. least-cost pathing, intersection) in ArcGIS
- Audit and update Drupal image and geospatial database (MySQL)
- Exercise design skill in building interactive maps, diagrams for publication, and database taxonomies

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

- Rebuilt defunct student project from the ground up; supervised work in computer vision and control systems
- Competed in AUVSI Seafarer Chapter's 2015 Student Unmanned Aerial Systems Competition

PROJECTS

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

- Sampled game-states from AI playthroughs of Super Mario, clustered states via unsupervised learning (JavaML)
- Wrote Q-learning algorithm, using cluster centroids as Q-table states and neural net ("NN") agent as tutor
- Successfully abstracted basic strategies of NN agent as Q-table state-action relationships

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

- Wrote Kohonen self-organizing map ("SOM") in MATLAB to cluster songs into genres
- Used various time series analyses on data 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

- Recursive neural network in MATLAB for generating MIDI drum sequences
- Spline-based waveform synthesizer on IPlug framework in C++
- Web-based interactive music/instruments using p5.js (see: sebwaz.com)

RESEARCH

Independent Researcher, Zili Liu Computational Perception Lab, UCLA (Summer 2015 – present)

- Applied Signal Detection Theory to visual perception, presented 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