Randall Pulido

Computer Scientist

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Education

9/2018 – Present **California Institute of Technology**
Pasadena, California
Expected Graduation Date: June 2022
Bachelor of Science: Computer Science

- Freshman Summer Research Institute participant

Work Experience

6/2019 – 9/2019 **Summer Undergraduate Research Fellowship**
Caltech Student-Faculty Research Program
Kirschvink Lab, Department of Geology

- Implemented a program to generate diagrams, based on the First Order Reversal Curve technique, that more accurately characterize magnetic particles.
- Constructed a system to prevent air contaminants from affecting sample analysis in the lab's 2G bulk magnetometer.
- Ran samples to obtain and analyze data of massively magnetic cells, namely magnetite, in tissue.

Project Experience

9/2020 – Present **Stock Market Predictor Using Machine Learning Techniques (Python)**
Individual, Independent Project

- Applied the perceptron algorithm to evaluate whether a given stock is a "buy" based on its same-day data and previous stock history.

11/2020 **Dynamic Memory Allocator for C programs (C, Python, and Java)**

- Implemented efficient malloc, free, realloc, and calloc functions.
- Optimized space utilization and throughput using explicit free lists and a segregated free list algorithm.

3/2021 **Shakespearean Sonnet Generation (Python)**
ML Group Project

- Implemented both a Hidden Markov Model and Recurrent Neural Network to generate Shakespearean poems.

Skills

Programming

- Python
- C, C++
- Java

Data Science

- MySQL
- MATLAB
- Mathematica

Coursework

Machine Learning

- Machine Learning and Data Mining
- Learning Systems

Databases

- Relational Databases

Mathematics

- Applied Linear Algebra
- Probability and Statistics
- Discrete Mathematics

Development

- Date Structures
- Programming Methods
- Algorithms
- Computing Systems
- Decidability and Tractability
- Functional Programming