DAVID MACOTO WARD

Software Developer

@ DavidMacotoWard@gmail.com (310) 433-9176 Los Angeles, CA davidmacotoward dmw01

PROJECTS

GPU Enabled Protein Conformational Sampling

python, numpy, pycuda, cuda c/c++

Sep 2020 — Dec 2021

- Developed boilerplate CLI app to run patented molecular dynamics simulation in parallel on GPUs using PyCUDA/CUDA framework
- Refractored legacy, hard coded C++ protein input parsers into OOP generated scalable, strongly typed data structures
- Presented in semesterly research and literature/seminars talks

ML Wildfire Prediction in CA

python, numpy, pandas, kernas, gdal, rasterio, javascript, d3.js, geojson

Aug 2020 — Jun 2021

- Data preprocessing engineer, web developer, and project manager
- Predicted fires in CA with 93% accuracy using machine learning and raw geospatial data
- Co-led initiative to increase spatial granularity of analysis regions by a factor of 60 by sub-setting data into counties using image masking
- Created interactive map SPA to visualize past spatiotemporal fire data
- Data Driven Documents (D3.js) was used to make SVG drawing from GeoJSON data of CA county boundaries
- Navigated group through complex analysis in unfamiliar geospatial data and frameworks
- One of two presenters in senior design showcase

EDUCATION

B.S. Computer Science

California State University Northridge

Aug 2018 — Dec 2021

Selected coursework: DSA (C++), Advanced DSA (Java), Algorithms (Java), Human Computer Interaction, Intro Database Design (Python/Java), Intro to Web Development, OOP (.NET, C#, Angular, and Typescript)

Lower Division Courses

Santa Monica Community College

Aug 2014 — Jun 2018

SKILLS

Proficient: C++ Python Javascript

Moderate proficiency: Java C C# HTML/CSS

Familiar: Git Jira Unit testing Bash NumPy Angular

EXPERIENCE

Student Researcher

Computer Science Lab, CSUN

June 2021 — August 2021

- Conducted literature review and ran experiments of workload balancing algorithms
- Created multi-dimensional plots for poster and symposium
- Funding from the CSU-LSAMP program

STEM Tutor

Santa Moninca College STEM Program

Jan 2017 — Jun 2018

- Lab tutor responsible for 11 undergraduate computer science, chemistry, and math courses
- Worked about 15 hours per week
- Average of 2-4 students at a time

Summer Research Intern

Electrical Engienering Lab, UCLA

Jun 2016 — Aug 2016

- Analyzed medical instrument image data using MATLAB, presenting in poster session and symposium of ~300
- Funding from SMC/UCLA SRI Program

AWARDS

- CSUN AI Jam – Summer Accelerator program offer ($3000) Presentation 2019
- Best Science Poster : SMC Global Citizenship ($1000 group) 2015

PARTICIPATION

- Hackathon : International Society for Computational Biology 2021
- CSUN Accessability Hackathon 2018