Willow Ross Carretero Chavez

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Education

Massachusetts Institute of Technology — Cambridge, MA — GPA: 4.7 *Graduating Fall 2024*

– Candidate for B.S. in Biology, relevant coursework:
  - Computer Science: Fundamentals of Programming, Math for Computer Science
  - Chemistry: Organic Chemistry I, Intro to Biological Chemistry
  - Biology: Genetics, Cell Biology, Molecular Basis of Infectious Disease, Molecular Biology

Mater Dei Catholic High School — Chula Vista, CA — GPA: 4.63 *Graduated May 2019*

Professional Experience

Google Cloud *Seattle, WA (Remote)*
Software Engineering Intern *May 2023 — Aug 2023*
– Reduced Google Kubernetes Engine Addon Manager (KAM, custom k8s resource deployment process) queries per second by up to 20% across 10k+ Kubernetes clusters and counting
– Designed, spec'd, and implemented KAM features in Golang to accelerate addon development

Massachusetts Institute of Technology *Cambridge, MA*
UROP Intern @ Jensen Lab *Sep 2022 — Dec 2022*
– Expanded a novel method of chemo-enzymatic retrosynthesis using Python and RDKit
– Designed and presented research poster at the 2022 Machine Learning for Pharmaceutical Discovery and Synthesis Consortium at MIT

UROP Intern @ Sinskey Lab *Feb 2021 — May 2021*
– Carried out cell culture maintenance of human cell lines in sterile conditions
– Executed cell counts, nanodrop, ddPCR, qPCR, and ELISA assays for DNA and protein quantification of samples from small-scale bioreactors

Wayfair *Boston, MA*
Software Engineering Co-Op *Jan 2022 — Aug 2022*
– Used diverse enterprise software tools (Docker, Kafka, Google BigQuery, Kubernetes, DataDog) and operated within a large team of software engineers and data analysts
– Created multiple microservice APIs using Java, Python, FastAPI, and PostgreSQL

D. E. Shaw Research *New York, NY (Remote)*
Early College Intern *Jan 2022 — Aug 2022*
– Ran free energy perturbation (FEP) molecular dynamics simulations of ligand-receptor systems
– Created novel method of FEP network generation using integer linear programming

Mathnasium of Mission Gorge *Santee, CA (Hybrid)*
Instructor *Aug 2019 — April 2021*
– Tutored 2nd-12th graders on topics ranging from single-digit addition to single-variable calculus

Kufareva Lab @ UC San Diego Skaggs School of Pharmacy *La Jolla, CA*
Volunteer, Staff Research Associate *Jul 2018 — Aug 2018, Feb 2019 — Dec 2020*
– Wrote toolkit to verify, validate, and visualize Boolean models of cell signaling networks
– Authored manuscript on the above toolkit; now published in BMC Bioinformatics as first author
– Performed analysis and visualization of TMT-MS^2 phosphoproteomic data using R
– Implemented new method of protein binding pocket similarity scoring using MolSoft ICMScript
– Performed human cell line tissue culture, PCR, and Gibson cloning protocols

Skills

– Fluent in English + Spanish, can converse in French
– Python, Java, Golang, R
– Git, Kubernetes, Docker
– Can use a micropipettor in sterile conditions
– Knows when to ask for help
– Driven by results and data
– Fast learner and curious