

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 queries per second by XX% in the Google Kubernetes Engine Addon Manager (KAM, custom k8s resource deployment process) across the world's largest Kubernetes cluster fleet
- Fleshed out proposed changes to KAM into specs, design docs, and Golang implementations

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-MS² 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
- Git, Kubernetes, Docker
- Knows when to ask for help
- Python, Java, Golang, R
- Can use a micropipettor in sterile conditions
- Driven by results and data
- Fast learner and curious