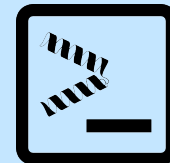


# Willow Ross Carretero Chavez

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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 2<sup>nd</sup>-12<sup>th</sup> 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<sup>2</sup> 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