

Willow Ross Carretero Chavez

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Education

Massachusetts Institute of Technology

Cambridge, MA

B.Sc. in Biology — GPA: 4.7

Expected Dec 2024

- Coursework: Fundamentals of Programming, Math for CS, Organic Chemistry I, Intro to Biological Chemistry, Genetics, Cell Biology, Molecular Basis of Infectious Disease, Molecular Biology, Microbial Physiology

Professional Experience

Google

Seattle, WA

Software Engineering Intern

Jun 2024 — Present

Software Engineering Intern

May 2023 — Aug 2023

- Designed and implemented extensions to the Kubernetes Addon Manager (KAM) in Golang to accelerate Kubernetes addon development and deployment
- Reduced KAM queries per second by up to 20% across the Google Kubernetes Engine fleet

Massachusetts Institute of Technology

Cambridge, MA

Undergraduate Researcher @ Jensen Lab

Sep 2022 — Dec 2022

- Expanded a novel method of chemo-enzymatic retrosynthesis using Python and RDKit
- Presented a poster at the 2022 ML for Pharmaceutical Discovery and Synthesis Consortium

Undergraduate Researcher @ Sinsky Lab

Feb 2021 — May 2021

- Executed cell nanodrop, ddPCR, qPCR, and ELISA assays for DNA and protein quantification of samples from small-scale bioreactors used for adeno-associated virus production

Wayfair

Boston, MA

Software Engineering Co-Op

Jan 2022 — Aug 2022

- Used diverse enterprise software tools (Docker, Kafka, Google BigQuery, Kubernetes, DataDog) as part of 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

May 2021 — Aug 2021

- Ran free energy perturbation (FEP) molecular dynamics simulations of ligand-receptor systems
- Created novel method of FEP network generation in Python using integer linear programming

Kufareva Lab @ UCSD Skaggs School of Pharmacy

Chula Vista, 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
- Analyzed mass spectrometry phosphoproteomic (TMT-MS²) data using R
- Implemented new method of protein binding pocket similarity scoring using MolSoft ICMScript

Publications

Carretero Chavez, W., Krantz, M., Klipp, E. et al. *kboolnet*: a toolkit for the verification, validation, and visualization of reaction-contingency (*rxncon*) models. *BMC Bioinformatics* **24**, 246 (2023).

Skills

- Fluent in English & Spanish, can converse in French
- Sterile lab technique
- Mammalian cell culture
- Molecular biology lab basics
- Knows when to ask for help
- Driven by results and data
- Fast learner and curious