# Saul Vega Sauceda

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## EDUCATION

**Massachusetts Institute of Technology (MIT)** **Cambridge, MA**
Candidate for B.S. in Computer Science and Engineering September 2020 – May 2024
GPA: 4.7/5.0
Relevant Coursework: Fundamentals of Programming, Organic Chemistry I, Machine Learning, Algorithms, Discrete Mathematics and Probability for Computer Science

## EXPERIENCE

**Summer Science Program (SSP) – Biochemistry** **La Jolla, CA**
*Research at University California, San Diego* June 2019 – August 2019

- Collaborated in a team to design an inhibitor for a fungal pathogen *Aspergillus Niger (A. Niger)* responsible for the molding of crops.
- Surveyed the genetic sequence and computed docking scores of the enzyme responsible for the propagation of the pathogen.
- Performed a series of *in vitro* substrate and inhibitor assays
- Generated *in silico* a proposed inhibitor according to the substrate specificity and compatibility

**MIT – Coley Research Group** **MIT**
*Valorization of bio-feedstock using computer-aided retrosynthesis* May 2021 – Present

- Simulated retrosynthetic and forward steps of chemical reactions to discover synthetic routes from proposed feedstock found in literature
- Analyzed existing literature for potential sources of renewable feedstock
- Developed and modified tools for analyzing and visualizing large datasets containing representations of chemical reactions
- Examined results of a tree builder search of +2000 therapeutic molecules
- Developed graphs and classes to model the data for analysis

**MIT – Kellis Lab** **MIT**
*Imputation of absolute RNA counts from scRNA-seq performed on neurons* June 2022 – Present

- Designed a pipeline to process scRNA-seq data for imputation and deployed in Docker for future collaborative efforts
- Evaluated current tools and research in multi-omics such as gene regulatory network inference algorithms and data diffusion models
- Developing a metric to compare sampling distributions from different modalities to combat batch effects such as capture rate

## ACTIVITES & AWARD

**Biliteracy Award** *(Spanish)* May 2020
**SSP Connect**, *Mentor* September 2020 – Present
**MIT Biotech Group,** *Mentorship Associate* October 2021 – Present
**HSF Scholar** July 2022
**MIT ESP HSSP,** *Co-Teacher for Intro to CS* June – August 2022

## SKILLS & INTERESTS

**Skills:** Python, Arduino, GitHub, Pandas, Numpy, Docker, RDKit, UNIX, Spanish
**Hobbies/Interests:** PC Hardware, Video Games, Soccer