SERGIO VELEZ

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY — Cambridge, MA

Bachelor of Science in Computer Science and Engineering; Minor in Economics — *Graduating May 2027*

Notable Coursework: Computer Systems Engineering, Software Construction (Typescript), Data Structures and Algorithms, Machine Learning, Computer Architecture, Macroeconomics, Microeconomics, Linear Algebra

EXPERIENCE

Duolingo — Pittsburgh, PA

Incoming 2025 Summer Software Engineering Intern — *October 2024-Present*

Replate — Remote

Winter Software Engineering Intern — *January 2025- February 2025*

- **Location-Based Metrics Integration**: Collected location-specific metrics (food recovered, CO_2 diverted, meals delivered, water saved) using PostgreSQL and integrated them into client impact reports, enabling clients to better communicate their impact to stakeholders.
- **Impact Report Redesign**: Redesigned the location impact report in Figma, then implemented it using HTML/CSS to improve the ability for clients to showcase key metrics to stakeholders.
- **API-Driven Data Visualization**: Integrated Chart.js to display monthly donated food by location, giving stakeholders a clear snapshot of donations made and simplifying reporting processes.

Replate — Remote

Software Engineer Intern — *May 2024 - August 2024*

- **Content Management System**: Implemented a key-value database with caching using PostgreSQL, improving overall workflow efficiency for 10+ admins by reducing their time spent updating HTML code.
- **Front-End Development**: Enhanced user experience using React by implementing user login state on Replate's website, resolving user sign-in conflict.
- **Developed Internal Tools for Admins**: Improved UI/UX for subscriber management by alphabetizing subscriber locations and allowing admins to sort through locations using React, increasing admin productivity.
- **Performance Optimization**: Reduced page load times by 50% by implementing caching strategies within the database, enhancing user experience and system performance.
- **Version Control and CI/CD**: Increased code quality through automated testing through Travis CI/CD and managed code base with GitHub, ensuring version integrity and smooth deployment.

PROJECTS

Star Battle: Recreated the game of Star Battle, focusing on server-side logic and game mechanics. Utilized Canvas API for graphics, designed and tested the Puzzle Abstract Data Type, and performed integration testing. Worked in a team of three and used an MIT GitHub account for version control and collaboration.

Memory Scramble: Built a multiplayer memory scramble game using Typescript, incorporating concurrent programming techniques for real-time game play. Implemented promises and deferred objects to handle game state synchronization across clients.

Amazon Stock Price Predictor: Developed a machine learning model in Python using Jupyter Notebook to predict Amazon's stock price, achieving a high accuracy rate through extensive data processing and feature engineering.

SKILLS

Programming: Python, JavaScript, TypeScript, C, C++, Assembly, C#, Java, Ruby on Rails, HTML/CSS

Technologies: Rest API, MongoDB, PostgreSQL, Canvas API, React, Artificial Intelligence, ESP32, Unity, Figma

Other Technology Skills: Concurrent Programming, Performance Engineering, Unit Testing, Using Web Sockets, Creating Abstract Data Types, Providing Code Review to my peers, Debugger, Command Line, Using Promises

Languages: English(Native), Spanish(Native)