

# SAMIR SANCHEZ TEJADA

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## EDUCATION

### Columbia University, Fu Foundation School of Engineering and Applied Science

New York, NY

Relevant Coursework: Data Structures In Java, Accelerated Multivariable Calculus, Intro to Computing for Engineers, Intro to Mechanics and Thermodynamics, Art of Engineering

Expected Graduation: May 2026

### Academy for Science and Design

Nashua, NH

Weighted GPA: 4.22/4.00

August 2018– June 2022

## SKILLS & INTERESTS

**Languages:** Java (Proficient), C++ (Proficient), Python (Learning), HTML (Proficient), CSS (Proficient), English (Fluent), Spanish (Fluent), Mandarin (Studying)

**Applications:** IntelliJ, Visual Studio Code, jGRASP, Arduino IDE, Jupyter Notebook, Google Drive, Microsoft Office

**Organizations:** Hispanic Scholarship Fund Scholar '22, ColorStack, BlackGen Capital, Society of Hispanic Professional Engineers

## RELEVANT EXPERIENCE

### Columbia University School of Social Work

New York, NY

Administrative Assistant

October 2022– Present

- Provided applicant services to over 75 students a week through emails, walk-ins and phone calls that ensured a great experience
- Supported co-workers with logistical tasks such as filing documents and calculating application scores for prospective applicants

### Jane Street Academy of Math and Programming (AMP)

New York, NY

Program Participant

July 2022– August 2022

- Participated in the inaugural summer of AMP, as one of 40 selected students, that focused on computer science, combinatorics, and number theory, and prepared students for the challenges of STEM majors and careers
- Designed, implemented, and presented efficient algorithms for solving a series of mathematically-focused puzzles and problems using Python Strings, loops, lists, tuples, and dictionaries that furthered students' knowledge of code and its capabilities

### FIRST Robotics

Nashua, NH

Business Lead/Treasurer

September 2019– May 2020 & September 2021– May 2022

- Organized the team's budget and expenses for the 2021-2022 season
- Led the business and art sub-teams comprised of 20 members to win an Entrepreneurship Award during competition season
- Created sub-team plans for three-hour meetings twice a week throughout the season containing projects for members to work on

### BAE Systems

Nashua, NH

Internship

April 2021– June 2021 & September 2021– October 2021

- Created a cell signal enhancer using aluminum foil and cardboard directed to the nearest cell tower that rose cell signals significantly
- Developed an enhanced plane model after analyzing thrust, drag and lift that was presented to workers and participants
- Learned circuitry and software by wiring buttons and LEDs on a breadboard and manipulated them to work using software

## PROJECTS

### Lucky Bird

New York, NY

Collaborative Project

October 2022– December 2022

- Coded a flappy bird clone in C++ using an Arduino that detects user button input, utilizes an LED panel, and displays the user's score
- Generated pipes at random heights, speeds and time intervals that increase the game's difficulty with time
- Designed and constructed an arcade machine using SOLIDWORKS that encased the Arduino, display and buttons

### Single Cell Segmentation

New York, NY

Collaborative Coding Project

October 2022– December 2022

- Trained a U-Net model onto a data set to perform single cell segmentation on Jupyter Notebook using Python
- Utilized 50 epochs to train the neural network, and compared it to the original test set by analyzing the DICE score per epoch
- Determined the best epoch to model the data and computed its performance on the test samples yearning an accuracy of about 98.4%
- Presented the results of the best-performing model to Columbia's Biomedical Engineering Department

### Brick Breaker

Litchfield, NH

Independent Coding Project

April 2021– June 2021

- Designed a brick breaker game in Java using Java OpenGL graphics library
- Adjusted the ball's physics depending on how far from the platform's center the ball hits and if block/wall collision is detected
- Utilized different object classes, arrays, loops and user keyboard input detection to develop the game

### The Effects Deicing Solutions Have on Concrete and Pavement

Litchfield, NH

Independent Research

October 2021– May 2022

- Analyzed the short-term effects calcium and sodium chloride have on concrete and pavement surfaces
- Presented research to a panel of experts within the fields my project focused on
- Wrote an 18-page paper detailing the methodology, experiment process, and results
- Won the Research and Methodology Award, one of three awards given by the Academy For Science and Design

### The Effects COVID-19 Has Had on the Homeless

Litchfield, NH

Independent Research

January 2021– June 2021

- Interviewed numerous homeless shelters across New England
- Developed a questionnaire and compiled gathered data through Google Sheets
- Wrote an 18-page paper documenting my process, results, and its implications
- Presented research at the NCSSS student research conference to over 100 audience members