Jose Carvajal-Beltran

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First-year, First-generation, low-income student from a rural background with award-winning research experience and demonstrated leadership skills. Seeking experiences that allow for hands-on discovery in the field of electronics and materials.

EDUCATION

Massachusetts Institute of Technology (MIT), Cambridge, MA Sep. 2025- May 2029
Bachelor of Science in Materials Science and Engineering

Wildwood Middle High School (WMHS), Wildwood, FL Aug. 2021-May 2025
Valedictorian: 5.328 Weighted Cum. GPA, 3.99/4.00 Unweighted Cum. GPA
Honors: *CollegeBoard's Small Town & Rural (+Hispanic) Recognition Award, Sunshine State Scholar, Cambridge AICE Diploma with Distinction, US Presidential Scholar Nominee, QuestBridge Match Recipient with MIT*
Relevant Coursework: *AICE Computer Science AS Level, AICE Environmental Management AS Level, AP Physics 1*

Lake-Sumter State College (LSSC), Leesburg, FL May 2023 - May 2025

LEADERSHIP

Captain*, *Academic Team/Quiz Bowl (WMHS) Aug 2021 – May 2025

- Achieved Semi-Finalist placement in Commissioner's Academic Challenge, a state competition with several counties in Florida participating in an Academic Bowl, for 4 years in a row. Directed Sumter County team to score highest in Sumter history with 11 teams in the division.
- Constantly coordinate weekly team rosters, prioritizing both the needs of the team and wants of the players. Recruited and mentored new members, tripling team size to establish both varsity and JV teams.

Vice-President*, *Science Club (WMHS) Aug 2021 – May 2024

- Provide guidance to students in upgrading research and presentation skills by suggesting methods to visualize methodology and instructing on criteria that judges score on based on previous experiences (10+ science fairs). School commonly outperformed other larger schools, taking more than 50% of State and International slots allocated.

WORK EXPERIENCE

Optimal Orientation of Volumetric Additive Manufacturing*, *M.I.T Undergraduate Research Feb. 2026 – Present

- Student researcher in MIT Department of Material Science and Engineering under Professor T.J. Wallin. Working on optimizing orientation angles (phi & theta) for a method of 3D printing via rigorous mathematical analysis of image frequencies
- Creating an algorithm such that any arbitrary shape can be automatically oriented for optimal mechanical strength/features. Implementation of algorithm into the group's codebase will ensure reduction of print processing time.

MIT 4-409 Mentor*, *M.I.T Edgerton Center Sep 2025 – Present

- Manage workspace operations by maintaining organization, mastering tools to train peers, and providing guidance on personal projects and after-hours access.

Orchid Cultivators, *Packer*, Wildwood, Florida Jun. 2024 – May. 2025

- Ensured over 20+ types of plants were in correct sections depending on type and growth, ensuring that customer orders were consistent. Regularly tracked each section to ensure there was no black rot/disease to contaminate other plants and that quality was regular.
- Fulfilled weekly task of sending plants to customers by filling carts with ~128 plants & filling trucks with 21 carts. This process would be repeated 2-3 times per major delivery day
- Being bilingual (fluent English and Spanish) allowed for seamless communication between workers and with customers, bridging any ambiguity that existed. Interactions with customers led to optimal plant choice along with proper communication on how to take proper care of plants

Projects

Mu-Zero, Electronics Lead July 2025 – Sep. 2025

- Worked with MIT Edgerton Lab to successfully wire a 120V AC OEM blower for use in an air hockey table project, making sure to implement safety features with no sacrifice in performance. Implemented knowledge of circuits and protoboards to create 2 beam-break sensors to track score. Cohesively presented final project to audience of ~80 including industry leaders.

Autorotation Modelling, Researcher Aug. 2021-May 2024

- Completed one year of research involving looking at the dynamics of a Maple Samara seed which falls with autorotation, effectively modelling the flight and its stages. For second- and third-year research, I took the principles that I learned and applied them into a theoretical space reentry capsule with rotors. I presented my research at the International Science and Engineering Fair twice, winning two special awards (CIA + Scholarship)