Luis Vazquez

Disciplined engineer passionate about pushing the boundaries of automated robotics.

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EDUCATION

Robotics Engineering Science
University of Toronto
08/2020 - Present

EngSci

- Relevant courses: Calculus, Fluid Mechanics, Manufacturing Engineering, Computer algorithms and Data Structures, Digital and Computer Systems, ODE's, Linear Algebra, Circuits Fundamentals, Electromagnetism

Advanced Placement (AP) and French Immersion
Sentinel Secondary
09/2015 - 06/2020

PROJECTS

Monorail Prototype (03/2022)

- Worked in a team of four to design and build an initial prototype of a monorail inspired cart that can travel along the wire it sits on
- Assembled the circuitry consisting of an Arduino Nano, a NEMA 17 motor, A4889 motor driver, a 12V adaptor, and other components
- Designed the *laser cut* plates that hold the four wheels and the motor in Fusion360 and InkScape

SolidWorks designs, 3D-printing and Joinery (05/2021 - 09/2021)

- Practiced using various SolidWorks features and capabilities to best design various personal projects and their iterations
- Inspired by Japanese wood joinery (Kumiki) when designing I focus on ease of assembly and sturdiness, minimizing the need for support material when printing
- Designed a kumiki-style headphone stand where I reduced the support material needed by ~80% by printing in four parts that join together cohesively
- Designed a rock climbing hangboard that uses wood and 3D-printed parts to join together perfectly to support my weight

Projectile Arm Device (09/2021)

- Using SolidWorks, I designed a device that attaches to your arm to shoot paintballs as part of a competition hosted by Red Line
- Ran simulations on the CAD software to verify the result of the calculations which indicated that the paintball would travel 46m when fired

Mental Health Hackathon Finalist - group of 3 (02/2021)

- Created a Google chrome extension using HTML, JavaScript and CSS with an animated water tracker, a daily word of the day and a formal checklist
- Implemented checklist animations alongside user editing and scrolling abilities

Python Synonym Finder (12/2020)

- Implemented a python based program that finds the synonym of a word with the highest percent accuracy based on the words that are used in the same sentence in a pdf provided by the user

EXPERIENCE

Manufacturing Engineer
Centivizer
05/2021 - 09/2021
Using technology to combat the functional decline in the aging population

Achievements/Tasks

- Designed and implemented consumer products and prototypes in SolidWorks
- Gathered and compiled data by running structural analysis on *cognitive centivizer* designs using FEA on ANSYS
- Conducted market research for the optimal mold-injection manufacturer and heart rate tracker devices to use in our products

SKILLS

SolidWorks | CSWA | ANSYS | Fusion360 | GD&T | 3D-printing | MATLAB | Python | JavaScript | HTML | out-of-the-box thinking | CSS | Arduino | Disciplined | Organized

ORGANIZATIONS

University of Toronto Hyperloop Team (UTHT)
(06/2021 - Present)
In the stability sub-system, I dealt with last-minute design fixes, updates and executed FEA on ANSYS of composite materials, in preparation for the European Hyperloop Week. In addition, I was in charge of creating the part drawings used in the manufacturing process.

Finn Land Lab Research- Programmer
(08/2021 - 03/2022)
As the lab programmer I help the cognitive neuroscience researchers with their data analysis using python and MATLAB

SHAD McGill (06/2019 - 07/2019)
High level STEM and Entrepreneurship program • Worked in a team of eight and developed a business plan and prototype for a real-world design challenge

ACCOMPLISHMENTS

Certifies SolidWorks Associate in Mechanical Design - CSWA (11/2021)

Sentinel Secondary Student Physics Award (06/2020)

British Columbia achievement Scholarship (06/2020)

VEX Robotics Awards: Build - Create - Excellence - Tournament Champion (2018 - 2020)

LANGUAGES

English ●●●●●

Spanish ●●●●●

French ●●●●○

INTERESTS

3D-printing | Robotics | Fluid Mechanics | AI | Machinery | Aerospace | Reading | Space Exploration | Running | Hiking | Biking | Bouldering