

### Project Overview

- D&K Engineering are interested in creating a self-dispensing granola kiosk with up to 12 automated hoppers, each containing a unique ingredient.
- A tablet, mounted to the front of the kiosk, running our custom app will be used to provide information to customers about the granola stored in each hopper, and will be the main ordering interface.

### Meet the Sponsor

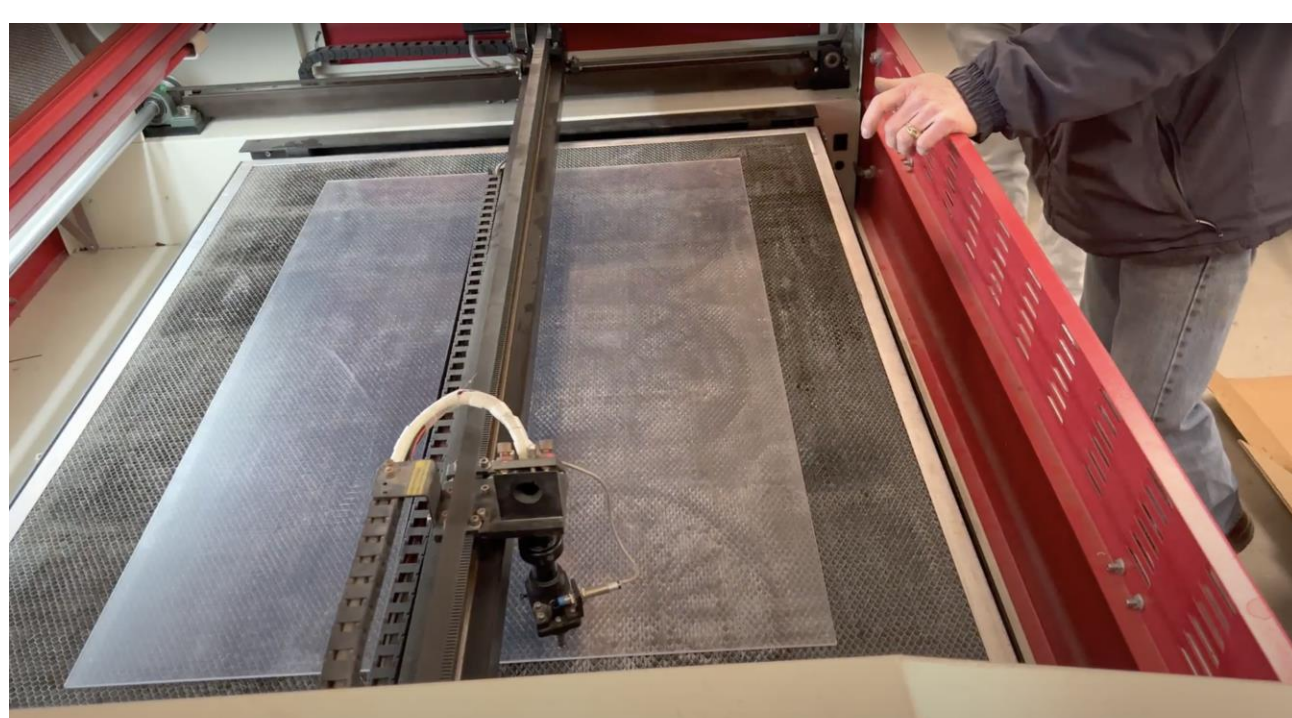
Headquartered in Rancho Bernardo, California, D&K Engineering provides contract engineering and manufacturing solutions for products and instruments that require highly innovative designs or complex manufacturing lifecycles. D&K Engineering provides their customers with professional support throughout the entire product lifecycle process spanning from requirements and specifications definition to manufacturing and after-market support. The professional support they provide was evident during the inception and creation of the current iteration of the smart granola vending kiosk.

### The Manufacturing Process

#### Water Jetting



#### Laser Cutting

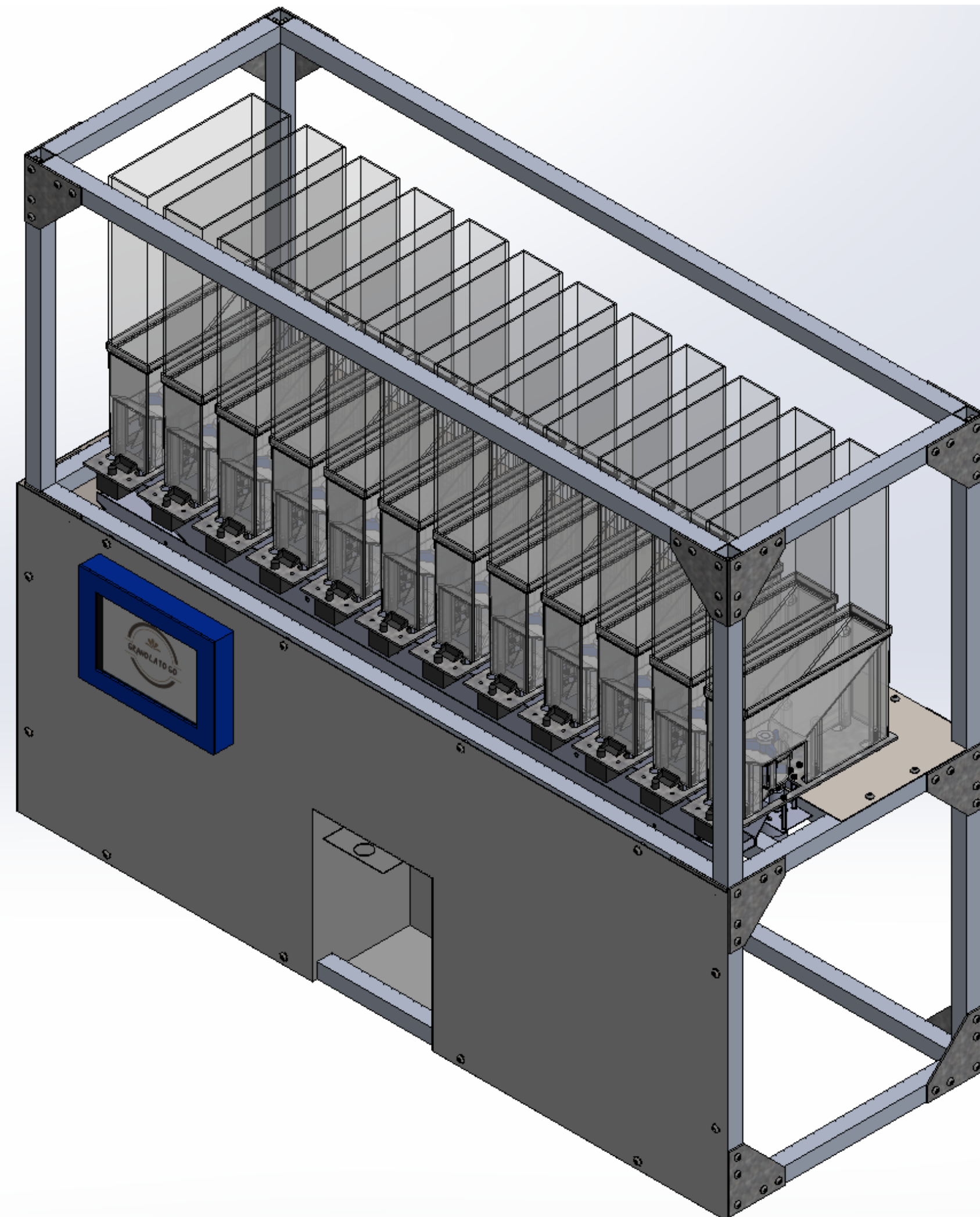


#### Manual Machining

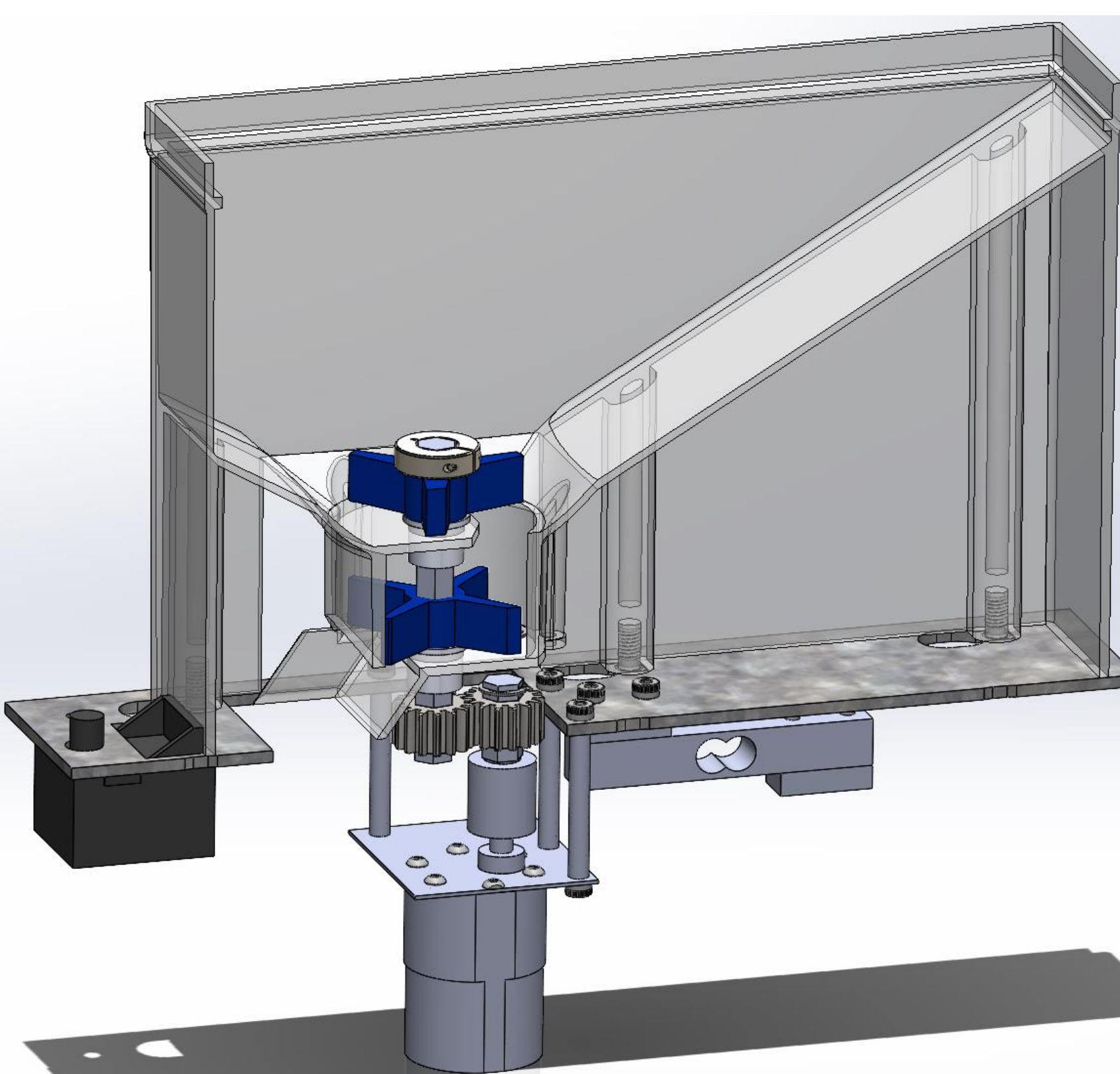


### CAD Models

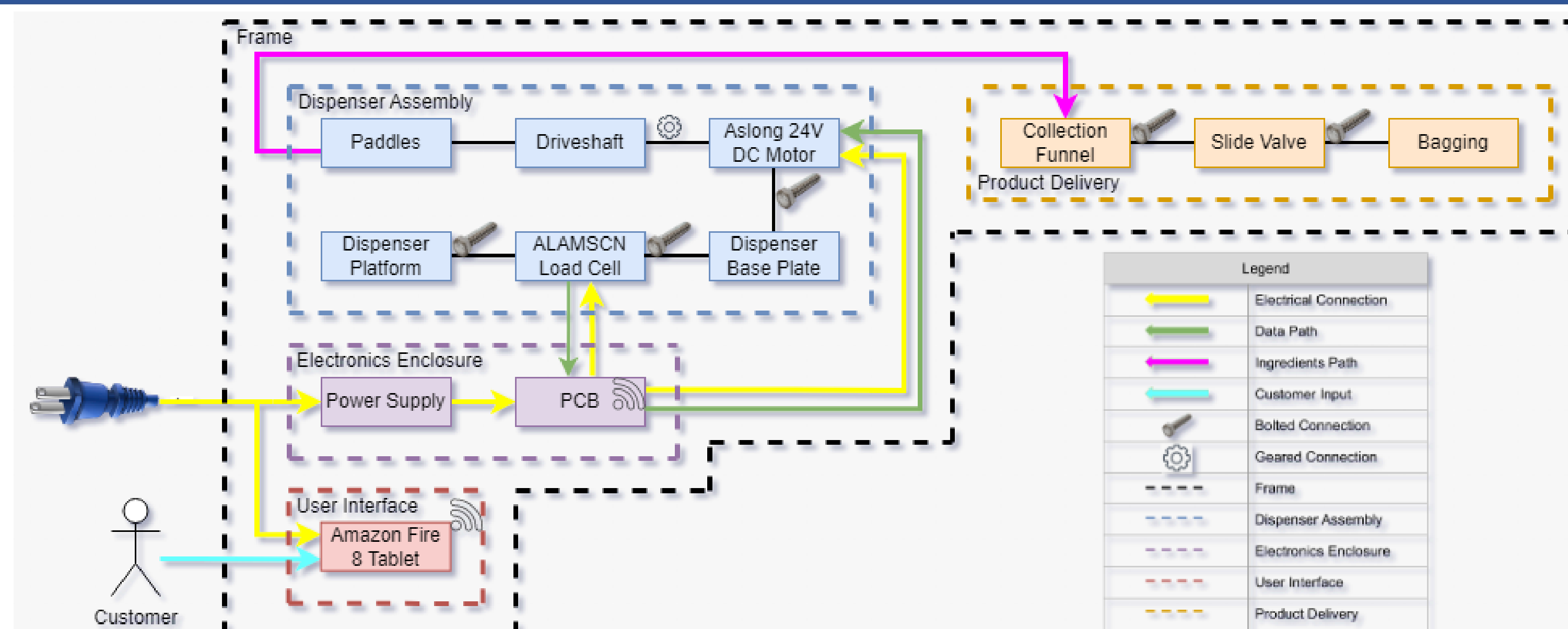
#### System Assembly



#### Dispenser Assembly

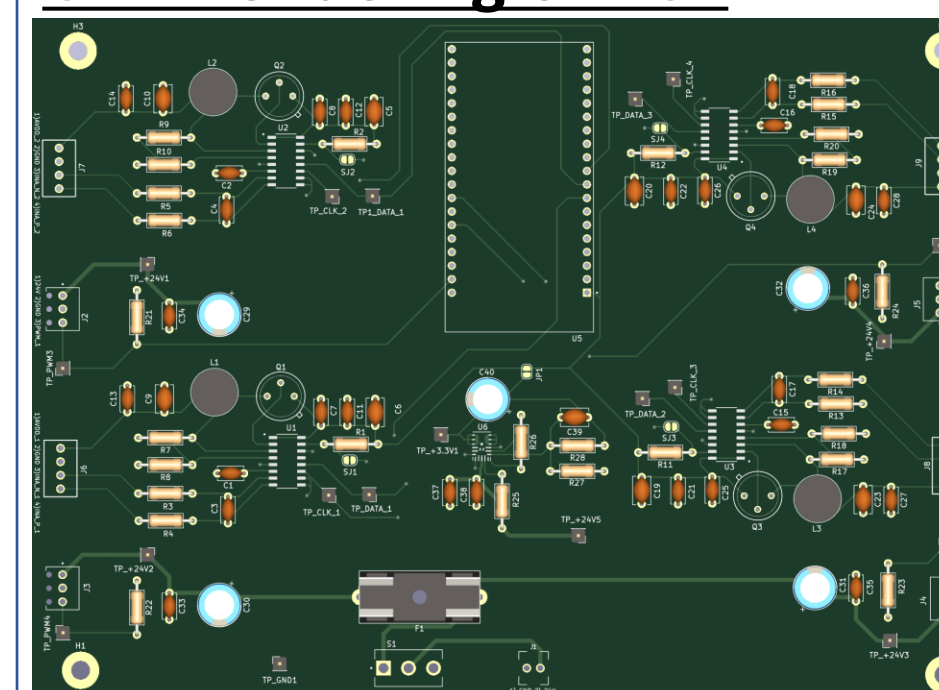


### System Level Diagram

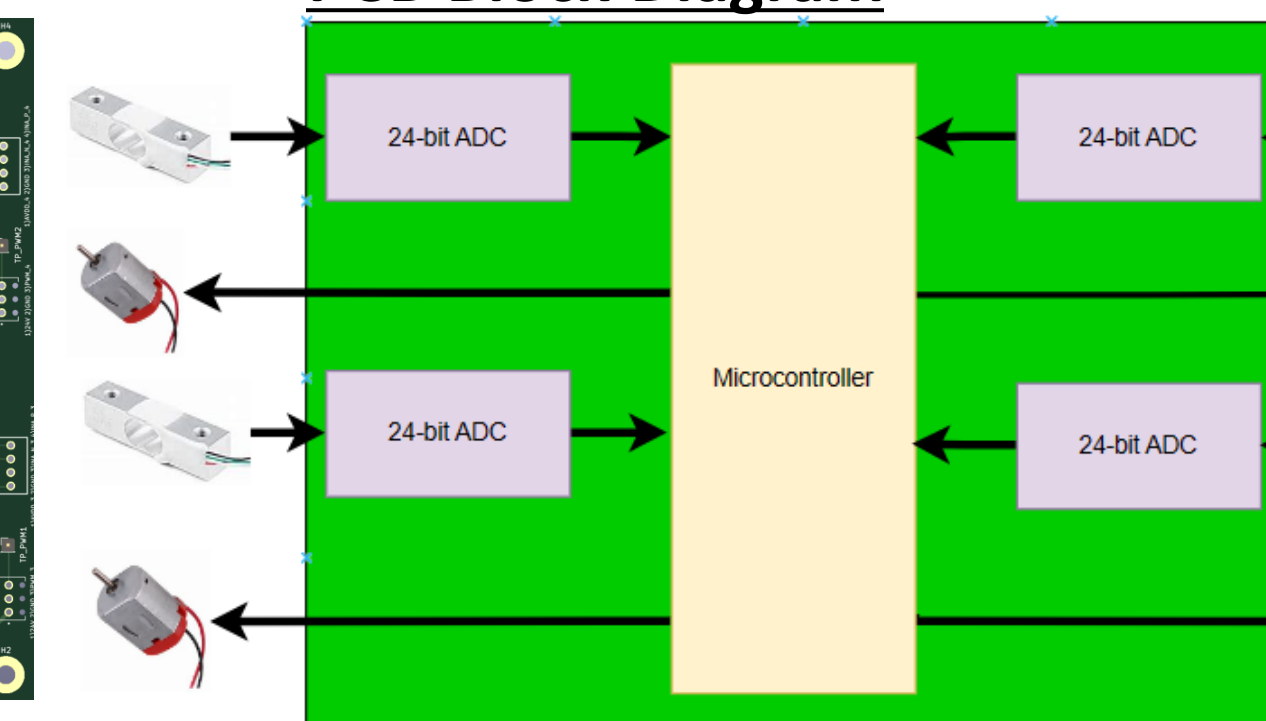


### PCB and Web-Application

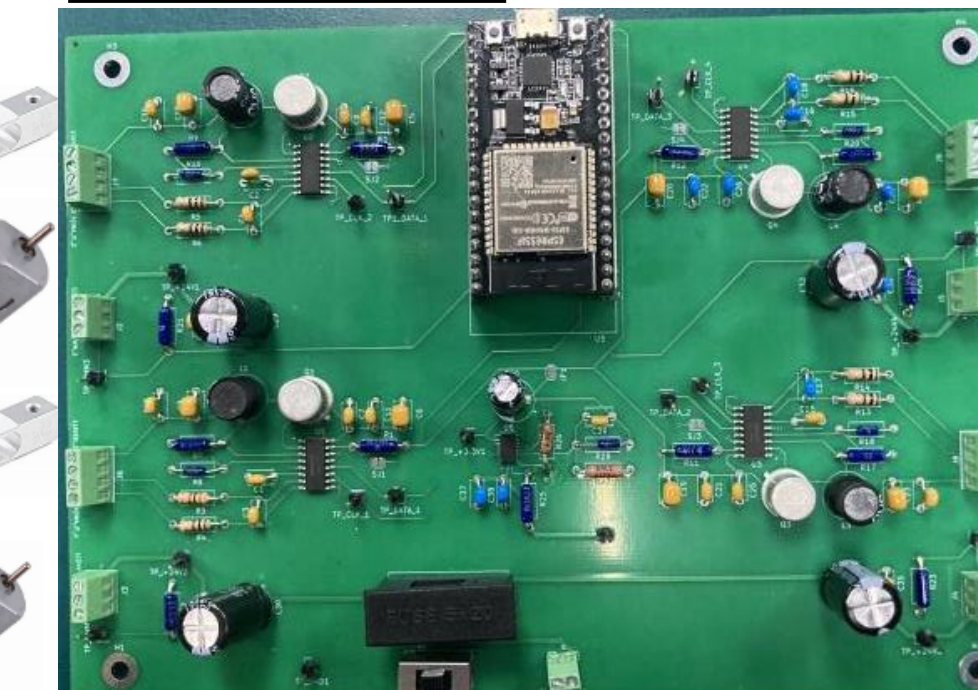
#### CAD Rendering of PCB



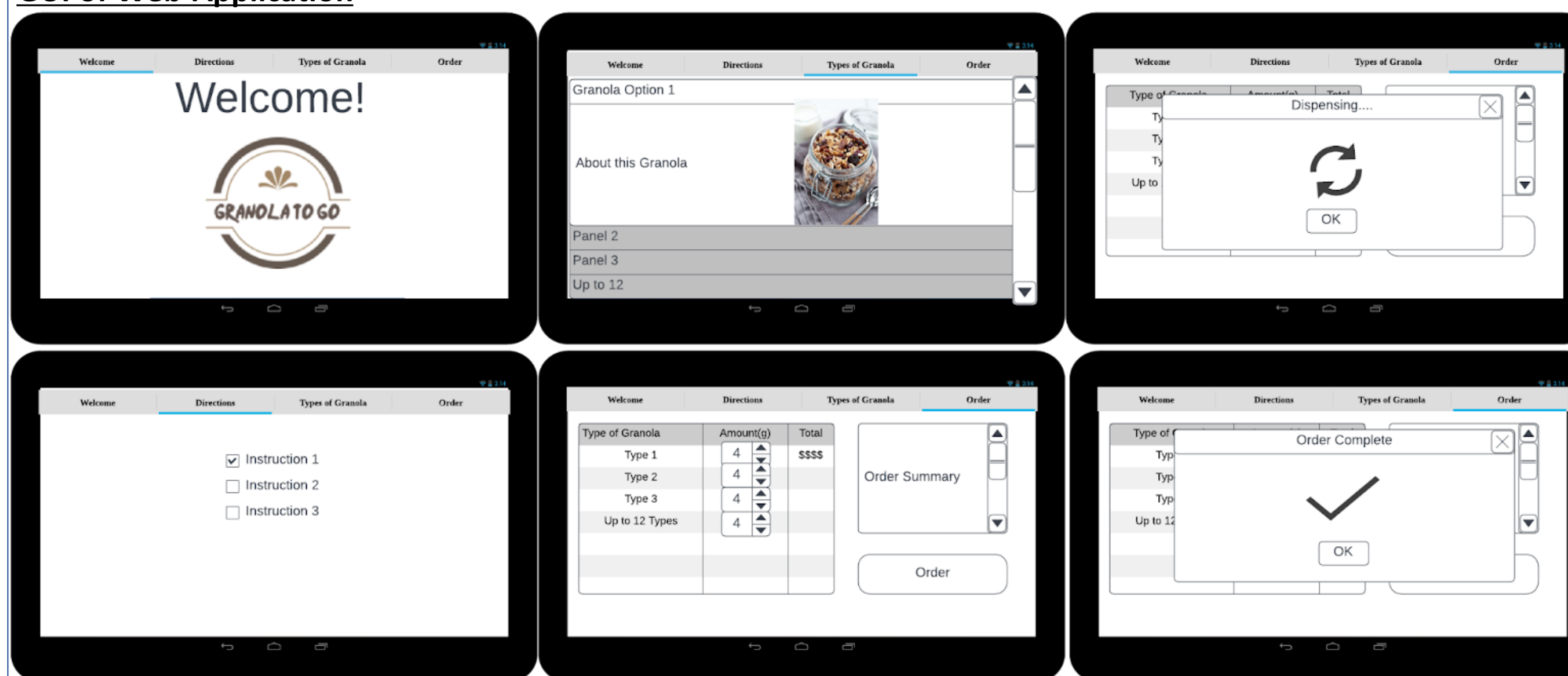
#### PCB Block Diagram



#### Picture of PCB



#### GUI of Web-Application



### Acknowledgments

The team thanks Dr. Shaffar and Dr. Dorr for arranging and advising this project. In addition, the team thanks everyone at D&K Engineering who supported this project, specifically Wayne Jackson, Victor Escobedo, Dusty Fisk, and John Reep. Finally, the team thanks The Granola Goats (2022) for the use of their animated video highlighting the project's overview.

### Meet the Granola to Go Team

#### Mechanical Engineering Team



Dylan Mazzarella  
ME Team Lead



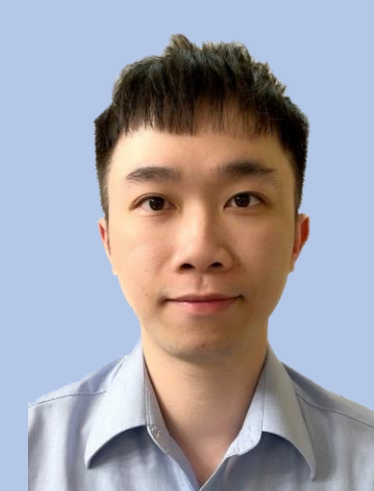
Jarlen Nichols  
External Interface Lead



Joshua Alanzon  
Dispensing System Lead



Nate Dockswell  
Manufacturing Lead



Jian Cai  
Design Lead

#### Electrical / Computer Engineering Team



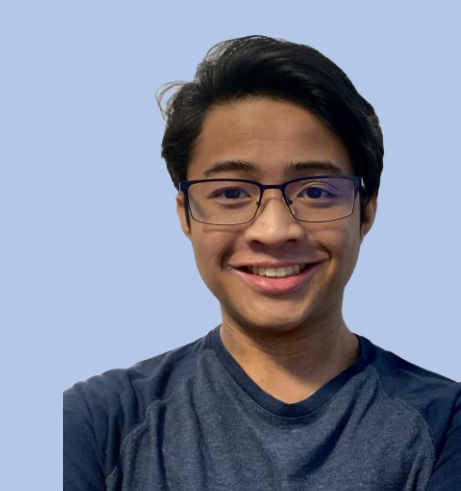
Rylan Bumbasi  
ECE Team Design Lead



Manuel Medina  
Hardware



Lauren Halbach  
Hardware



Joseph-Gerard Placido  
Firmware/ System



Rodrigo Sosa  
Software