**TEAM CONTRACT FULFILLMENT**

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**PROJECT GOALS**

At the start of the semester, our goal was to design and build a Battlebot featuring two defensive mechanisms: a flipper arm and vertical spinners. The objective was to create an innovative and functional bot that adhered to the Battlebot guidelines set by Professor Gruev while demonstrating effective defense strategies. However, as we progressed and gained more knowledge about PCB design and component constraints, we realized that incorporating both mechanisms within the 2-pound weight limit was not feasible. Consequently, we revised our design while ensuring it still met all the guidelines. Our Battlebot adheres to the 2-pound limit, uses the recommended battery, avoids mechanisms involving flying or jumping, and has no metallic components on its external surface; instead, all external parts are 3D-printed using the approved plastic. Despite the design changes, we successfully met our primary goals and built a functional Battlebot that complies with the competition's rules and constraints.

**EXPECTATION**

The expectations outlined in our team contract were met. Everyone worked diligently on their assigned tasks and actively sought help when needed. We held weekly meetings to ensure steady progress, provide a platform for team members to ask for assistance, and verify any uncertainties before moving forward with design changes or decisions. These regular check-ins helped us stay aligned and maintain effective collaboration throughout the semester.

**ROLES**

We did not designate a formal leader for our team, instead opting to tackle each challenge collaboratively through regular group meetings. This approach allowed us to leverage everyone’s input and expertise for critical decisions. Having previously worked together on team projects in classes like ECE 391, we already had experience collaborating effectively, which helped us work seamlessly as a team throughout this project.

At the start of the semester, we collectively decided on the initial CAD design before dividing specific tasks among the team. Deepika was responsible for designing and 3D printing the robot. She successfully carried out this task, and whenever she needed input on design decisions, we held group meetings to finalize changes. Based on these discussions, she updated the design and continued printing as needed.

Ishanvi’s role involved creating the schematic and researching the components required, including analyzing voltage needs. She met with multiple TAs to verify her schematic and ensured it aligned with the evolving design changes. As updates were made, she revised the schematic accordingly and frequently called for team meetings to seek input and finalize decisions.

Megha was tasked with establishing communication between the ESP and the PC, which she successfully accomplished. Additionally, she provided significant support to both Deepika and Ishanvi. Megha assisted Ishanvi with PCB routing and resolving DRC errors and helped Deepika with mathematical calculations for the CAD design. Her collaborative efforts extended beyond her primary responsibilities, contributing to the overall success of the project.

By combining our individual strengths and working collaboratively, we were able to address challenges effectively and ensure the project’s completion while adhering to all guidelines.

**AGENDA**

Our team made decisions about the project primarily through regular team meetings, where we discussed progress, set goals, and addressed any challenges. Whenever an issue arose, we worked together to analyze the problem and reached a mutual decision on how to proceed. In cases where there was a conflict or difference in opinion, we sought guidance from our TAs during office hours. Their expertise and feedback were invaluable in helping us resolve disagreements and make informed decisions. Additionally, we often consulted with other TAs to gain diverse perspectives and ensure the best possible solutions for the project. This collaborative approach allowed us to tackle challenges effectively and maintain steady progress throughout the semester.

**TEAM ISSUES**

Our team did not encounter any major issues throughout the course. When conflicts or differences in opinion arose, we addressed them by seeking guidance from our TAs during office hours, as well as consulting other TAs when needed. Their expertise and feedback helped us reach well-informed conclusions. Having previously worked together on projects in classes, we had a good understanding of each other's working styles, which enabled us to collaborate effectively. Additionally, we followed the processes and guidelines set out in our team contract, ensuring a smooth workflow.

In hindsight, the only change we would suggest to improve our team experience would be to establish more concrete deadlines. In classes like ECE 391 and ECE 385, having set deadlines for assignments and MPs helped streamline our progress. For example, setting firmer deadlines for the 3D printing of the CAD design could have enhanced our efficiency. Additionally, we should have aimed to submit the PCB order in the second round. Although we made an effort, we encountered a technical issue, and starting the process earlier might have allowed us to meet that deadline. Overall, while our teamwork was effective, these adjustments could have made the experience even better.