**Team Charter**

Adviser: Dr. Ryan Green, green@ece.msstate.edu

External adviser: Dr. Adam Jones, jones@cse.msstate.edu

Team membership:

|  |  |  |  |
| --- | --- | --- | --- |
| Role | Name | NetID | Major (EE or CPE) |
| Leader | Garrett Bradshaw | gmb271 | EE |
| Member | Slade Hicks | sch456 | EE |
| Member | Kyler Smith | kss445 | CPE |
| Member | Brandon Waldrup | bww134 | EE |

**Team Name:** Train and Go

**Mode & Frequency of Communication:**  
We plan to use Discord and weekly in-person meetings in the Hi-5 Lab to communicate with our external advisor, Dr. Adam Jones. We will communicate with our internal advisor, Dr. Ryan Green, using email in addition to weekly in-person meetings in his office. As far as communication between team members, we will be communicating using Microsoft Teams primarily, but we will also use Discord to have a record of ideas and material requests that Dr. Jones can see and guide. Responses to internal communications are expected within 12 hours of the message. In case of a quarantine situation, meetings will be held solely through Microsoft Teams and Discord.

**Submission Schedule:**  
Documents will be completed 48 hours before any official deadline for internal team review. Team contributions will be submitted through Microsoft Teams. External submissions will be completed within 4 hours of any official deadline.

**Team Roles:**  
Our team is separated into 4 subsystem teams led by one team member each. Each subsystem also has a co-leading team member. Table 1 has a condensed list of each of these.

Table 1

|  |  |  |
| --- | --- | --- |
| Subsystem | Lead | Co-lead |
| Motion Tracking | Kyler Smith | Slade Hicks |
| Obstacle Detection | Garrett Bradshaw | Brandon Waldrup |
| Wireless Communication | Slade Hicks | Kyler Smith |
| Power Management | Brandon Waldrup | Garrett Bradshaw |

The motion tracking team will oversee the integration of a system to track and communicate the wheelchair into a virtual reality (VR) environment. The obstacle detection team will oversee the connection and processing of obstacle detection sensors. The wireless communication team will connect the wheelchair with wireless controllers and wirelessly controlled computer systems. The power management team will supply power to each of the electronic components requiring power.

**Potential Obstacles:**  
One of the most challenging technical aspects of developing the wheelchair will be the sensor processing and user input to decide what signals should be output. Another challenging aspect will be the development of Bluetooth communication between the wheelchair’s onboard controls and the VR environment.

**Conflict Resolution:**  
Conflicts will be handled at an individual level before addressing them with the team. The chain of resolution should start with the individuals involved in the conflict. If the conflict is not resolved, it can be discussed with the team leader, Garrett. If the conflict continues unresolved, Dr. Green can enter the discussion, and Dr. Dabbiru can be approached for a final call. If there was a conflict over a design choice, the lead for that subsystem would have the final say. If that design choice is a safety concern, it should be discussed in Microsoft Teams and at the weekly team meeting. If design conflicts remain unresolved, the design decision can be brought to Dr. Jones and Dr. Green for an added opinion.

**Additional Comments or Concerns to Discuss with Dr. Dabbiru & Ms. Nordin:**

None

**Signatures**

Garrett Bradshaw gmb271

Slade Hicks sch456

Kyler Smith kss445

Brandon Waldrup bww134