Statement of individual goals
GuoYuan Li

Roles:

I will be primarily responsible for the design and implementation of the user interface for the AuBi robot. I'll also be working on the external communication and biometric teams due to the high dependency between my subsystem and theirs.

User Interface Roll Outputs:

Team:

As the leader of the user interface team, it is my responsibility to delegate certain tasks to my team members Jordan Leiber, Lujiejie Shen, and Yulin Zhou. Jordan is also responsible for the physical design and I'll be working closely with him to make sure the display can fit in the body of the robot and is appropriately tilted. Lujiejie and Yulin are in charge of the external communication and biometric subsystems, which will eventually interface with the UI for authentication and communication displays.

Deliverables and Contributions:

It is my responsibility to develop the UI subsystem with a general information display, including time, date, calendar, weather, newsfeed, and scheduled events, and major information displays for biometric authentication, external communication, cargo storage, and battery status. Therefore, the majority of the work will be software development for implementing the features mentioned onto the interface, and some minor hardware connection for communicating with the interfaced subsystems.

To implement the general information modules, I'm considering using MagicMirror2, open-source software designed for display because it has already implemented all the general information and many other useful modules; however, they don't support any smart touch functionalities. Therefore, my work for the built-in modules is to implement a smart touch module to make them interactive. Alternatively, the preexisted modules can stay standalone, while the new modules will support smart touch. If that doesn't work, then a GUI will be designed from the ground up to fully support smart touch.

I'll be responsible for the I/O communication between subsystems for the development of new modules when the related subsystems are mostly done. The biometric(facial recognition) module will have authentication messages include user registration, authentication preparation, and validation results. The external communication module will direct the user to the navigation website for telling the robot where to go. Finally, the cargo module will present the cargo registration, storage status, and cargo locations. To ensure the incorporation of the subsystems, I'll assist the other groups in building, testing, and more importantly, connecting so that the UI can receive the correct inputs and deliver the correct outputs.

The interface, including the content and the arrangement, will be revised based on the opinions of the team until proper. When the interface is finished, I'll be responsible for the demo to show how well it interfaces with other subsystems and displays useful information.

A tentative weekly breakdown:

Date	User Interface		
NOV 1st 2021	Study the code for general modules as well as the smart touch module. Study the documentation: figure out ways to incorporate smart touch into other modules	JAN 24TH 2022	Fully develop and test the biometric module: make sure lists for new users are completed, validation results are given correctly, and prompts for authentication are correctly displayed with given inputs The design of cargo storage begins - Cargo registration - Storage status - Cargo map
NOV 8th 2021	Understand how to implement smart touch and incorporate it into other modules	JAN 31ST 2022	Completion of the biometric module Fully develop and test the battery module
NOV 15TH 2021	The design of the biometric module begins: - Authentication preparation - Validation results - User registration	FEB 7TH 2022	Integration of facial recognition and UI Completion of the battery module
THANKSGIVING	Break	FEB 14TH 2022	Integration of battery and UI Fully develop and test the cargo module
NOV 29TH 2021	The design of external communication begins - Redirecting to navigation website Design of battery begins - Battery status	FEB 21TH 2022	Completion of the cargo module Integration of cargo and UI
DEC 6TH 2021	Fully develop and test the biometric and external communication module: make sure the website with floor map is reached and is responsive to touch	FEB 28TH 2022	User interface final testings Completion of user interface
DEC 13TH 2021	Completion of the external communication module	MARCH 7TH 2022	Integration of entire system
		SPRING BREAK	
		MARCH 21TH 2022	Final testing