1. Off Grid Solar
2. Slumberpod
3. Underwater Vehicles
4. Collision Detection Bucket Sensor
5. Burger Bot
6. TranzVolt
7. Papa Johns
8. (Backup Self Project Ideas)
    a. Motorizer (Device to motorize any furniture with legs, I.e. tables, chairs, etc.)

Ranking:

1. TranzVolt
2. Off Grid
3. Papa Johns -Sensors
4. Slumberpod
5. Ours

TranzVolt:

This project caught our group's attention as it presents the interesting problem of developing a portable motorized lift system with a challenging lift capacity. We recognize that the project will require work in developing a motorized carriage that must be adaptable to a ladder-like track, a failsafe system in the event of system failure, and remote-control systems to control the operation of the carriage. We believe that our team has the necessary skills to target the development of the motorized carriage, investigate the limitations of existing solutions, and to develop an improved prototype that will be intuitive with safety as our top priority.

Our team is composed of two Computer Engineers, three Electrical Engineers and one Mechanical Engineer with a diverse skill set to cover the programming, circuitry, power management, wireless communication, and CAD modeling challenges that this project presents. This makes our team a strong candidate for improving the existing TranzVolt design.

Our Electrical Engineering team members have extensive experience in PCB and IC design for various signal processing and power applications along with radar and controls experience. Our Computer Engineering team members have experience supervising power delivery systems for Georgia Tech's EcoCAR as well as experience with embedded systems and MCU programming for Georgia Tech's ATHENA lab research in radio frequency transmissions. Our Mechanical Engineering member has interned at an Aluminum company and has a lot of experience in SolidWorks and sheet metal modelling. He is also comfortable using DFM and DFA as well as optimization of existing models because of the projects he worked on during his internship at Alcon. He also has extensive coursework in both structural design and motor control systems.

As a team, we have worked on several group projects successfully and possess highly developed interpersonal skills along with an exceptional team dynamic. We believe that this combination of individual skillsets and team-oriented experience makes us the perfect fit for this project.

Off Grid Solar:

This project caught our group's attention as it presents the interesting problem of developing a modular recharging system with the challenge of being sustainable and off-grid. We recognize that the project will require work in developing a power storage system, power conversion systems, and adaptation to environmental conditions. We believe that our team has the necessary skills to target the development of the recharging system, investigate the limitations of existing solutions, and to develop a prototype that will be sustainable and easy to use.

Our team is composed of two Computer Engineers, three Electrical Engineers and one Mechanical Engineer with a diverse skill set to cover the programming, circuitry, power management, and CAD modeling challenges that this project presents.

Our Electrical Engineering team members have extensive experience in PCB and IC design for various signal processing and power applications. Our Computer Engineering team members have experience supervising power delivery systems for Georgia Tech's EcoCAR as well as experience with embedded systems and MCU programming for Georgia Tech's ATHENA lab. Our Mechanical Engineering member has extensive CAD and prototyping experience.

As a team, we have worked on several group projects successfully and possess highly developed interpersonal skills along with an exceptional team dynamic. We believe that this combination of individual skillsets and team-oriented experience makes us the perfect fit for this project.

Papa Johns - Sensors:

As ardent pizza lovers, it is in our team's vested interest to improve the makeline of any pizza company. Papa Johns, with its proximity to campus, is certainly enjoyed by almost every person at Georgia Tech. This makes the project even more exciting for our team as we have an opportunity to give back to our student community. Our team is particularly interested in working on a solution that integrates real-time accuracy and quality monitoring with process control and dynamic order management. We feel that these are the areas that can have the biggest impact on a positive consumer experience and that these processes also have a lot of scope for improvement.

Our team is composed of two Computer Engineers, three Electrical Engineers and one Mechanical Engineer with a diverse skill set to cover the programming, circuitry, power management, wireless communication, and CAD modeling challenges that this project presents. This makes our team a strong candidate for improving the Papa Johns makeline.

Our Electrical Engineering team members have extensive experience in PCB and IC design for various signal processing and power applications along with radar and controls experience. Our Computer Engineering team members have experience supervising power delivery systems for Georgia Tech's EcoCAR as well as experience with embedded systems and MCU programming for Georgia Tech's ATHENA lab research in radio frequency transmissions. All of us are also adept at working with sensors. Our ME member has a lot of SolidWorks experience from his internship at Alcon and his work with the LIDAR lab. In addition, he also has a lot of insights into manufacturing processes and optimizing them because of his previous internships.

Finally, our team consists of individuals that have worked on a lot of group projects successfully and possess highly developed interpersonal skills. We believe that this combination of individual skills ets and team-oriented experiences make us the perfect fit for this project. Let's make sure that every pizza lover gets the best quality pizza and gets it fast!

Slumberpod:

The Slumberpod project immediately caught our group's attention as the project requires challenges that our team's skills match perfectly. In terms of embedded systems and controls, parent and noise machine communication is going to be a vital aspect of this project. Also, audio filtering of the extra background noise will be needed.

Our team is composed of 2 computer engineers, 3 electrical engineers, and one mechanical engineer, and we have the perfect spread to address the programming, circuitry, simulation, and CAD modeling challenges that this project presents. Dakota Survance and Raymond Jia, both computer engineers, have a background in real world applications of controls development, implementation, validation, and verification. They will ensure that the software functionalities of the baby monitor are properly installed. Our two electrical engineers, Juyeop Baek and Oliver Bunner, are adept at hardware integration. Any PCB design or other circuitry needs will be met by their exemplary experience. Finally, as a mechanical engineer, Sri Krishna Suveer Yerramilli has already acquired immense experience in the industry. His background in CAD and 3D printing will ensure that our team can address the structural and versatility requirements of the monitor and the remote . Our team is a perfect fit to meet the challenge of creating a monitor-headphone system that can not only soundly put babies to sleep but prevent override of other important sounds for the parents.

Finally, our team consists of individuals that have worked on a lot of group projects successfully and possess highly developed interpersonal skills. We believe that this combination of individual skillsets and team-oriented experiences makes us the perfect fit for this project.

Motorizer (Proposed by Raymond as a backup):

Our bid: This project caught our group's attention as it presents the interesting problem of developing a portable motorized furniture lifting system for usage by civilians. We recognize that the project will require work in developing a motorized carriage that must be adaptable to diverse furniture shapes, a failsafe system to prevent slope runaways, and a control system to control the movement and lifting of the carriage. We believe that our team has the necessary skills to target the development of motorized carriages, investigate the limitations of existing solutions, and to develop a safe and portable prototype that will be intuitive to civilian users. Our team is composed of two computer engineers, two electrical engineers, and one mechanical engineer and we have a diverse skill set to cover the programming,

circuitry, power management, wireless communication, and CAD modeling challenges that this project presents. Our electrical engineering team members have extensive experience in PCB and IC design along with controls experience. Our computer engineering team members have experience supervising power delivery systems for Georgia Tech's EcoCAR as well as experience with embedded systems and MCU programming for Georgia Tech's ATHENA lab research in radio frequency transmissions. Our mechanical engineering member has experience with CAD and mechanical design for dynamic manipulation of robots working for Georgia Tech's LIDAR lab research in Intelligent Decision and Autonomous Robots. Team members also have internship experience in their respective fields at companies McVeigh and Mangum Engineering, General Motors, L3Harris Technologies, Aluminum Bahrain, and ALCON. We believe that our group's skill set is ideal for this project's development of a motorized carriage and would excel if given the opportunity to work on the project.

Underwater Vehicles:

This project caught our group's attention as its concept employed the usage of swarm robotics for environmental monitoring. We recognize that the project will require work in a unique field of robotics, underwater vehicles, as well as work on swarm robotics, developing optimization systems to control a network of such vehicles. We believe that our team has the necessary skills to target the development of the physical vehicle, investigate the limitations of existing solutions, and to develop an improved swarm vehicle that can be deployed for basic testing. Our team is composed of two computer engineers, two electrical engineers, and one mechanical engineer and we have a diverse skill set to cover the programming, circuitry, simulation, and CAD modeling challenges that this project presents. Our electrical engineering team members have extensive experience in PCB and IC design along with radar and controls experience. Our computer engineering team members have experience supervising power delivery systems for Georgia Tech's EcoCAR as well as experience with embedded systems and MCU programming for Georgia Tech's ATHENA lab research in radio frequency transmissions. Our mechanical engineering member has experience with CAD and mechanical design for dynamic and d exterous manipulation of robots working for Georgia Tech's LIDAR lab research in Intelligent Decision and Autonomous Robots. Team members also have internship experience in their respective fields at companies McVeigh and Mangum Engineering, General Motors, L3Harris Technologies, Aluminum Bahrain, and ALCON. We believe that our group's skill set is ideal for this project in swarm robotics and would not disappoint if given the opportunity to work on the project.

Collision Detection Bucket Sensor:

This project caught our group's attention as its concept involved the development of a sensor system for hazard detection. We recognize that the project will require work in some form of visual or non-visual hazard detection system as well as some interface that will be connected to the truck that will warn the driver of approaching hazards. We believe that our team has the necessary skills to target the development of the sensor system, investigate the limitations of existing solutions, and to develop an improved prototype that will advance situational awareness for bucket truck drivers. Our team is composed of two computer engineers, two electrical engineers, and one mechanical engineer and we have a diverse skill set to cover the programming, circuitry, ranged detection, and CAD modeling challenges that this project presents. Our electrical engineering team members have extensive experience in PCB and IC design along with radar and controls experience. Our computer engineering team members have experience with embedded systems and MCU programming for Georgia Tech's ATHENA lab research in radio frequency transmissions. Our mechanical engineering member has experience with CAD and mechanical design for dynamic and dexterous manipulation of robots working for Georgia Tech's LIDAR lab research in Intelligent Decision and Autonomous Robots. Team members also have internship experience in their respective fields at companies McVeigh and Mangum Engineering, General Motors, L3Harris Technologies, Aluminum Bahrain, and ALCON. We believe that our group's skill set is ideal for this project on hazard warning systems and would excel if given the opportunity to work on the project.

Burger Bot:

?

A brief overview of our team's experience and skills is listed below:

Oliver Bunner has 1.5 years of experience working in Georgia Tech's solar racing club, where he worked intimately with solar panels and learned how to design and implement circuitry while managing to accommodate the delicate body of the solar cells. He has experience in power analysis and distribution through his internship at McVeigh and Mangum engineering, where he designed all electrical facets on multiple projects, such as hotels, multifamily apartments, restaurants, and more.

Dakota Survance has 1.5 years of experience in embedded controls development and testing, including positions on Georgia Tech's EcoCAR team and at General Motors. He is adept at requirement creation, implementation, and verification to ensure that all software runs as intended, meeting both the customer and engineering needs of a multitude of projects.

Raymond Jia

Su Yoon Jang has been a PCB Intern at OXOS Medical Inc. since Spring 2021. She has experience in designing, printing and soldering PCBs. She also has experience with technical documentation.

Sri Krishna has a lot of CAD his internship at Alcon and his work with the LIDAR lab. In addition, he also has a lot of insights into manufacturing processes and optimizing them because of his internships at an aluminum manufacturing company (ALBA) and a contact lens manufacturing company (ALCON).

Juyeop Baek has designed numerous PCBs and ICs in his classes and projects, with usage spanning from signal processing to power to ADCs and DACs. He also has experience mounting

Finally, our team consists of individuals that have worked on a lot of group projects successfully and possess highly developed interpersonal skills. A few of our members also have experience completing previous projects together, so we possess an exceptional team dynamic. We believe that this combination of individual skillsets and team-oriented experiences make us the perfect fit for this project.

A brief overview of our team's experience and skills is listed below:

Oliver Bunner

Dakota Survance

Raymond Jia

Su Yoon Jang

Sri Krishna has a lot of CAD and 3D Printing experience from his internship at Alcon and his work with the LIDAR lab. In addition, he also has a lot of insights into manufacturing processes and optimizing them because of his internships at an aluminum manufacturing company (ALBA) and a contact lens manufacturing company (ALCON).

Juyeop Baek

Finally, our team consists of individuals that have worked on a lot of group projects successfully and possess highly developed interpersonal skills. We believe that this combination of individual skillsets and team-oriented experiences make us the perfect fit for this project.

We believe it is our team's responsibility to ensure that every pizza lover gets the best quality pizza and gets it fast!

<There are two options on the Expo Dashboard: Actuators and Sensors>