

Homework Assignment #2, ECE/BME 296, spring 2024  
Due 4/19/2024, 11:59 PM

- 1.) Assume the ultrasonic ranging system is employed in air traffic control. What is the importance of having a short response time in terms of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic considerations? Discuss all that apply.
- 2.) Develop a set of requirements the ultrasonic ranging system needed to achieve (e.g., track five objects and keep track of the closest object).
- 3.) What benefits do you see in simplifying the design (both hardware and software)? Consider designs with different servo rotation speeds. Discuss and evaluate the tradeoffs between more power usage versus better monitoring of moving targets as well as the tradeoff between accurate field view versus individual target distance measurements.