What is claimed is:

1. A computer-implemented method implemented for controlling an autonomous vehicle, the method comprising:

obtaining, by a computing system comprising one or more first computing devices in communication with one or more first sensors, from an autonomy system that is separate from the computing system and comprises one or more second computing devices in communication with one or more second sensors, data indicative of a planned trajectory of the autonomous vehicle through a surrounding environment, wherein the planned trajectory is based at least in part on sensor data from the one or more second sensors;

determining, by the computing system, a region of interest in the surrounding environment based at least in part on the planned trajectory;

obtaining, by the computing system, data indicative of the region of interest using the one or more first sensors;

identifying, by the computing system, one or more objects in the region of interest based at least in part on the data obtained by the one or more first sensors; and

providing, by the computing system, data indicative of the one or more objects in the region of interest to the autonomy system of the autonomous vehicle.

2. The computer-implemented method of claim 1, wherein obtaining the data indicative of the region of interest using the one or more first sensors comprises:

steering, by the computing system, the one or more first sensors of the autonomous vehicle toward the region of interest; and

controlling, by the computing system, the one or more first sensors steered toward the region of interest to obtain the data indicative of the region of interest.

3. The computer-implemented method of claim 2, wherein steering the one or more first sensors comprises:

adjusting, by the computing system, a region of detection associated with each of the one or more first sensors to overlap at least in part with the region of interest.

4. The computer-implemented method of claim 3, wherein adjusting the region of detection associated with each of the one or more first sensors comprises:

physically moving each first sensor, by the computing system, via one or more actuators associated with each first sensor.

5. The computer-implemented method of claim 1, the method further comprising:

providing, by the computing system, one or more control signals to one or more vehicle control systems to control a motion of the autonomous vehicle, wherein the one or more control signals are based at least in part on the one or more objects identified in the region of interest.

6. The computer-implemented method of claim 1, the method further comprising:

controlling, by the autonomy system, the autonomous vehicle based at least in part on the one or more objects identified in the region of interest.

7. A computing system for controlling an autonomous vehicle, the computing system comprising:

one or more first processors in communication with one or more first sensors; and

one or more tangible, non-transitory, computer readable media that collectively store instructions that when executed by the one or more first processors cause the computing system to perform operations, the operations comprising:

obtaining, from an autonomy system that is separate from the one or more first processors and comprises one or more second processors in communication with one or more second sensors, data indicative of a planned trajectory of the autonomous vehicle through a surrounding environment, wherein the planned trajectory is based at least in part on sensor data from the one or more second sensors;

determining a region of interest in the surrounding environment based at least in part on the planned trajectory;

obtaining data indicative of the region of interest using the one or more first sensors;

identifying one or more objects in the region of interest based at least in part on the data obtained by the one or more first sensors; and

providing data indicative of the one or more objects in the region of interest to the autonomy system of the autonomous vehicle.

8. The computing system of claim 7, wherein the operations further comprise:

steering the one or more first sensors of the autonomous vehicle toward the region of interest; and

controlling the one or more first sensors steered toward the region of interest to obtain the data indicative of the region of interest.

9. The computing system of claim 8, wherein the operations further comprise:

adjusting a region of detection associated with each of the one or more first sensors to overlap at least in part with the region of interest.

10. The computing system of claim 9, wherein the operations further comprise:

physically moving each first sensor via one or more actuators associated with each first sensor.

11. The computing system of claim 7, wherein the operations further comprise:

providing one or more control signals to one or more vehicle control systems to control a motion of the autonomous vehicle.

12. The computing system of claim 7, wherein the autonomy system obtains data indicative of the surrounding environment of the autonomous vehicle from the one or more second sensors, identifies one or more objects in the surrounding environment based at least in part on the data indicative of the surrounding environment from the one or more second sensors, compares the one or more objects in the surrounding environment with the one or more objects in the region of interest, and provides one or more control signals to control the autonomous vehicle based at least in part on the comparison.

13. The computing system of claim 7, wherein the autonomy system provides one or more control signals to adjust one or more settings associated with identifying an object.

14. A computer-implemented method for controlling an autonomous vehicle, the method comprising:

providing, by a computing system comprising one or more computing devices in communication with one or more first sensors, to a collision mitigation system that

is separate from the computing system and comprises one or more second computing devices in communication with one or more second sensors, data indicative of a planned trajectory of the autonomous vehicle through an environment proximate to the autonomous vehicle, wherein the planned trajectory is determined based at least in part on sensor data from the one or more first sensors;

obtaining, by the computing system from the collision mitigation system in response to providing the planned trajectory, data indicative of one or more objects in a region of interest, wherein the one or more objects in the region of interest are determined by the collision mitigation system based at least in part on the planned trajectory and sensor data from the one or more second sensors;

identifying, by the computing system, one or more differences between the sensor data from the one or more first sensors and the sensor data from the one or more second sensors based at least in part on the data indicative of the one or more objects in the region of interest; and

adjusting, by the computing system, one or more settings associated with detecting an object in the environment based at least in part on the one or more differences.

15. The computer-implemented method of claim 14, further comprising:

training, by the computing system, a machine-learned model based at least in part on the one or more differences.

16. The computer-implemented method of claim 14, further comprising:

controlling, by the computing system, a motion of the autonomous vehicle based at least in part on the one or more adjusted settings.

17. The computer-implemented method of claim 14, further comprising:

adjusting, by the computing system, the planned trajectory of the autonomous vehicle to avoid the one or more objects in the region of interest.

18. The computer-implemented method of claim 14, further comprising:

providing, by the computing system to the collision mitigation system, data indicative of at least one of a speed, an acceleration, and one or more vehicle actions of the autonomous vehicle, wherein the data indicative of the one or more objects in

the region of interest is based at least in part on at least one of the speed, the acceleration, and the one or more vehicle actions of the autonomous vehicle.

19. The computer-implemented method of claim 14, further comprising:

providing, by the computing system, one or more control signals to one or more vehicle control systems to control a motion of the autonomous vehicle.

20. The computer-implemented method of claim 14, further comprising:

obtaining, by the computing system, data indicative of the environment from the one or more first sensors;

identifying, by the computing system, one or more objects in the environment based at least in part on the data indicative of the environment from the one or more first sensors;

comparing, by the computing system, the one or more objects in the environment with the one or more objects in the region of interest; and

providing, by the computing system, one or more control signals to control the autonomous vehicle based at least in part on the comparison.