Individual Discovery Project Pitch

Project Name	Nerf Gun Turret with associated Android app that allows you to control the turret remotely Will also attempt to implement face tracking for automatic aiming once the main mechanisms are working
Project Location	My apartment, the Hive

Est. Start Date	9/30/23	**Est. Completion Date**	11/10/23

Summary	• Take apart an electronic nerf gun that I already own, using the electronics inside and 3D printing to design the actual turret. • Arduinos and servo motors to operate aiming • Use android studio to develop the mobile app to control the device over bluetooth or wifi • Later use python try to implemet computer vision in the project
Desired Outcome	• Create a cool project that can go on an e-portfolio while learning a lot about relevant topics
Action to Completion	• Research what I'll need to complete the project (have an arduino uno already, what other motors, sensors, and cameras I'll need) • Get the nerf gun from my house, disassemble, and figure out how the electronics work • Design the turret with the electronics in mind • 3D print the turret and assemble • Make sure the turret functions manually • Develop the app • Computer vision maybe with a raspberry pi
Timeline to Completion	• Weeks of 9/25, 10/2: begin learning how to develop android apps, figuring out what motors to use, begin turret design • Weeks of 10/9,10/16: will get the Nerf gun over spring break, disassemble and figure out how to put into the turret, programming • Weeks of 10/23, 10/30: 3D print the turret, begin testing movement, interface with the app
Benefits of Project	• Combines a lot of different skills • Will help solidify my understanding of programming Arduinos • Introduce me to android app development
What skills do you hope to gain?	• Learn how to develop android apps, which is mostly just interesting but could be useful in the future as well • Learn how to use cameras, motors, etc. with arduinos • Learn how to use a raspberry pi for face recognition