Reflection

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Advisor: SURIYA NATSUPAKPONG

Topic: Physical Aimbot for FPS Games using Computer Vision

What have you done right in the previous phase?

1. I thoroughly researched and evaluated the physical mechanism required for the project, including compiling a detailed list of components and selecting communication methods (using PySerial) and board options (ESP32).
2. I proactively reached out to an expert who has executed a similar project, gaining valuable insights on hardware selection and design strategies, which helped shape the project's direction.
3. I initiated the CAD design process and began organizing the mechanical layout, ensuring that our component choices align with the project's objectives and future integration with the computer vision module.

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What could you have done better?

1. I could have adhered more strictly to the planned timeline; my progress was slower than expected due to unforeseen health issues.
2. Better documentation of early design iterations and prototype tests would have provided clearer benchmarks for improvement.
3. I need to refine my focus and time management to balance the mechanical development and preparation for the machine learning aspects more effectively.

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What do you aim to achieve next?

1. Finalize the CAD design and monitor the delivery of the hardware components that have already been ordered online.
2. Assemble the physical parts as soon as they arrive, and rigorously test the assembly to ensure smooth movement and calibration.
3. Begin the integration and testing of the computer vision module, with a focus on addressing latency issues between image capture and motor response.

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What are changes in the plan?

1. The project timeline has been adjusted to account for a 1-2 week delay due to slower progress and personal health setbacks.

2. Although the overall project scope remains the same, the schedule now reflects a slight delay while still emphasizing the key areas of mechanical design and computer vision integration.
3. The motor choice has been updated from a stepper motor to a micro DC motor to better suit the project's .
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How do you feel toward this work right now?

I feel excited and challenged by the work ahead. Despite some setbacks and delays, I remain highly motivated to overcome obstacles and make significant progress. The complexity and integration of robotics with computer vision continue to inspire me to push forward.

How has your advisor treats you (academics, research skills, personal support, ...)?

So far, I have simply updated my progress during this phase, and my advisor has been professional and supportive. Although his involvement has been limited in this mechanical phase, I anticipate that his role will become significantly more active during the next phase—especially when I begin developing and refining the computer vision model.