AAI-3303 Course Project - Team Reflection

I. Approach to project

Our team decided to attempt the 2025 MABe Challenge on Kaggle for our ML1 course project. While we did not successfully solve the problem or train a particularly high-performing model, the process was a valuable learning experience. Our approach was dynamic, as every step presented unique learning opportunities. Consequently, we chose to work in parallel while following a shared path of research and conceptual reasoning. Communication was facilitated primarily through Discord text and voice channels. The overarching development cycle evolved naturally as our understanding of the problem deepened over the course of the semester. Our project is compiled into multiple notebooks and scripts representing our exploration of the project over the semester at a repository here, on GitHub. This repository was a unified platform that we pushed work to and acted as a canonical reference for the team members to refer back to when working on solutions.

II. What worked well and what challenges were faced?

Our approach was effective for *learning* about the problem and connecting it to concepts from the textbook and lectures. However, working in parallel hindered the *productivity* of the project itself. We essentially progressed only as fast as one person working alone. This was not necessarily a flaw in the approach, but rather a result of our limited expertise, which made direct collaboration less optimal. Working in tandem offered minimal productivity gains that would not have outweighed the hindrance to individual learning. There are likely more effective methods for beginners to approach complex challenges like the MABe competition, which would be beneficial from a pedagogical perspective.

III. Was the workload balanced?

The workload was balanced fairly evenly (50/50), despite our laissez-faire approach to task distribution. Interestingly, the division of labor naturally shifted over time: one member contributed more heavily during the first half, while the other took the lead in the second half. A more synthesized approach might have been more appropriate for this assignment. We struggled to find ways to leverage team-based productivity, as the work required extensive individual study to bridge knowledge gaps.

IV. What would your team do differently next time?

To address these challenges in the future, we see two options: avoid attempting problems that significantly exceed the team's current expertise, or treat the project explicitly as a learning process and adjust objectives accordingly. By treating the project as a form of guided study, we gained significant insight into how high-dimensional problems are tackled in the real world. The most value came from "fieldwork"—observing *professionals* on Kaggle throughout the competition and attempting to implement their techniques in our own notebooks. Crafting a novel solution was unlikely given our initial skill set, so the project became an exercise in observation and analysis. Next time, we would likely be more motivated by an applied, team-based approach if we framed the problem as a "guided lecture" from the outset.