

About this template document:

1. This document contains a template for your team to fill in for your required AI Studio “Monthly Progress Summary” for October (*due November 1st, 2023 in your AI Studio course in Canvas; and detailing work completed by your team in October 2023 during the “Modeling & Evaluation” phase of your project*).
2. This document should be stored in your team’s Project Folder in Google Drive, for easy access by team members; your AI Studio TA/Tutor/Course Support; and the Break Through Tech AI Program Team. Submission details are available in Canvas.
3. You can review an example Monthly Progress Summary in the Bridge to Studio module of your AI Studio course in Canvas, on the page titled, “Team Breakout: Team Resources”. However, please note that this example corresponds to Data Understanding/Prep, not Modeling & Evaluation.

[View the template below](#)

## [Template] Monthly Progress Summary (October)

### I. Modeling Summary

#### Question:

Please provide a summary of your team's Modeling-related accomplishments during the month of October (focusing on the types of tasks detailed in this month's Progress Evaluation Rubric, in the categories for Algorithm Selection and Model Training and Testing). Remember to include any relevant links to your work (e.g., a Python/Colab notebook showcasing your team's work).

#### Student Team Response:

We did not make much progress in model-related accomplishments this month, as we received our actual data at the beginning of this month. However, we have the designs of a model, and the dataset is fully labeled and we are now ready to start building the model. Our data processing is in [this](#) google colab. The data processing we have done so far is to fully understand the kinds of data that was collected in the study so that we knew what features were relevant to feed into the model. The exact features we will use will fluctuate throughout the modeling process, but preliminarily, we will use the exact type of fungi, the time of the sample collection, and the location of the sample. We will experiment with using other features, such as the quantity of bacteria in addition to its presence. We will also experiment with one-hot-encoding the bacteria species.

### II. Evaluation Summary

#### Question:

Please provide a summary of your team's Evaluation-related accomplishments during the month of October (focusing on the types of tasks detailed in this month's Progress Evaluation Rubric, in the categories for Model Evaluation and Model Improvement). Remember to include any relevant links to your work (e.g., a Python/Colab notebook showcasing your team's work).

#### Student Team Response:

The model we have decided to build will Calculate the likelihood that at a given time a bat population will develop WNS. The model will make a binary classification based on the input data of the time, location, and specific type of fungi present on the bats skin. An expected difficulty will come from the number of fungi present as well as the number of states and counties present. We

expect to try to use a neural net, a decision tree, as well as possibly experimenting with tokenization and treating the features as natural text. We will experiment with the loss functions of NLL and MSE. Interpretability is extremely important, so we may also explore more interpretable algorithms. Performance can be visualized with a simple confusion matrix, as this is a binary classification problem. This will allow for the greatest amount of insight into holistic model performance.

### **III. Lessons Learned and Challenges**

#### Question:

Reflecting on the Modeling and Evaluation phases, what were the key insights or challenges your team encountered? How did you address them? Share any important lessons learned that can help guide future steps in the project.

#### Student Team Response:

*Our team encountered several challenges through the modeling and evaluation. Firstly, at the beginning of the month, we were still struggling on how to deal with whether we should use acoustical vs non acoustical data, due to our challenge advisor's inconsistent advice. At the beginning of the month's Maker day, we finally decided on the datasets we were going to use as well as how to combine those datasets and clean them to have a working dataset to use for our model. We learned that even then there is no clear solution on how to figure out something, we need to take it into our own hands and think about the best way to approach a solution based on how we see fit.*

*Another solution we faced was a lack of communication and clarity sometimes about completing work and having everyone on the same page. Sometimes we would be confused on which work was to be completed by the week, or communicating tasks would be inefficient. We realized that having tasks where everyone completes a given task by the end of the week was too rigid and inefficient, especially with everyone's differing and busy schedule, and we found it more efficient to just break down into smaller groups for each group to complete a task by the end. It also allowed us to directly communicate better with each other whenever we were stuck.*

### **IV. Next Steps (Modeling and Evaluation)**

#### Question:

Given your current progress, what additional tasks does your team need to complete in

connection with the Modeling and Evaluation phases of your project? What is your plan to complete these tasks?

Student Team Response:

*Based on our current progress and the future schedule, we need to hurry up on modeling and evaluation. Because of our asynchronous working times, we were unable to make full use of our time together to complete data preparation and basic model training. However, the dataset is at a ready stage, and we will all start training simple models to guide our evaluation so as to improve the models. Since we have a clear goal and timeline for the necessary steps we need to take before the final presentation, we will work closely and more concretely together with our TA and Challenge Advisor to efficiently, sustainably finish the project.*

*Additionally, we will divide the model training, evaluation, and presentation preparation work into small groups. This will ensure we efficiently push the progress of the project, and improve the quality of our work based on personal skills. By completing these tasks, we will be able to enhance the quality and relevance of our model for our project goal.*

## **V. Request for AI Studio TA Support**

Question(s):

What additional support do you need from your AI Studio TA/Tutor/Course Support? Please structure your response as specific questions, related to the Modeling and Evaluation phases of your project. Consider areas where you may require specific guidance, clarifications, suggested approaches, or suggested resources. Your AI Studio TA will review these questions and work through them with you in an upcoming meeting or chat.

Student Team Response:

Given our failure to find usable acoustic data these past weeks, is it possible for us to proceed using non-acoustic data?

1. Based on our current progress, what advice would you give to help us get the most out of our time?
2. What's your suggestion on balancing the model training and evaluation process?
3. Is there anything we should keep in mind as we are building up the model as well as the presentation?
4. How would you recommend us prepare for the November practice presentation?

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