Report Date: 09/23/2022
To: ematson@purdue.edu, ahsmith@purdue.edu, and lee3450@purdue.edu
From: Coyote2

- Yejin Lee (20195221@hallym.ac.kr)
- Heesun Jung (20195251@hallym.ac.kr)
- Youngbin Kim (binny9904@kw.ac.kr)
- Bokyung Kwon(bbo1209@kw.ac.kr)
- Jihyeon Park (wpfflzld325@jejunu.ac.kr)

Summary

- Jihyeon, Youngbin and Yejin presented the paper summary.
- Team Coyote2 set goals and plans for the project.
- Team Coyote2 studied the book named “Machine learning that you study alone”[1] chapter 4-2, 5-2 in the morning.
- In this research, team Coyote2 found datasets.
- For this study, researchers studied LibRosa for audio classification.

What Coyote2 completed this week:

- For this study, team Coyote2 studied the book named “Machine learning that you study alone”[1] chapter 4-2, 5-2 every morning. Chapter 4-2 is about the “Stochastic Gradient Descent method” and chapter 5-2 is about “Cross-Validation and Grid search”.
- For this research, team Coyote2 started to use the library called LibRosa for audio classification.
- In this study, researchers had a meeting with Mia and set the project goal.
- Researchers made a diagram about the overall project and Gantt chart with team Coyote1.
- In this study, Griffin, Youngbin Kim, Jihyeon Park, and Yejin Lee presented a paper on what they read. [2][3][4][5]
- Team Coyote2 found datasets about coyote howling and canidae audio.

Things to do by next week

- Selection of papers for next week's presentation. Bokyung Kwon, Yejin Lee, and Griffin will present on Monday, and Jihyeon Park, Youngbin Kim, and Heesun Jung will present on Wednesday about the paper.
- Keep studying a Machine Learning book called "Machine learning that you study alone"[1] until Chapter 7.
- Reviewing Python code about LibRosa.
- Implement Python code about Audio classification.
- Meeting with Mia every Wednesday, at 3 pm.
- Preparing for the elevator pitch.

Problems or challenges:

- There were some problems in our dataset like copyright, the amount of the data and the length of the audio.
- According to our clear goal, the dataset setting can be changed. Therefore, defining the goal of our project clearly is most important.
- For solving audio classification problems, the research needs coyote datasets. In this process, it has trouble gathering the coyote howling datasets. At first, the number of datasets was lacking. In addition, the paper should check the copyright when collecting audio datasets from public platforms such as Youtube.

References

[1] Hyesun P. “Machine learning that you study alone,” in *Hanbit Media*, 5th ed., South Korea, 2022, pp. 26-213.
[2] Yaqin, S., Emily, B., Sean, S., Michael, E., Nicola, F., "Evaluation of Feature Extraction Methods for Bird Song Classification”. 2021
[3] Şaşmaz, Emre, and F. Boray Tek. "Animal sound classification using a convolutional neural network." 2018 3rd International Conference on Computer Science and Engineering (UBMK). IEEE, 2018.
[4] Lindasalwa Muda, Mumtaj Begam and I. Elamvazuthi., "Voice recognition algorithms using mel frequency cepstral coefficient (MFCC) and dynamic time warping (DTW) techniques." arXiv preprint arXiv:1003.4083 (2010).
[5] Vera-Diaz, Juan Manuel, Daniel Pizarro, and Javier Macias-Guarasa. "Towards end-to-end acoustic localization using deep learning: From audio signals to source position coordinates." Sensors 18.10 (2018): 3418.