**Week of April 1st:**

**Progress Overview:**  
This week, the team continued to make progress on the AI-Driven Mental Disorder Detection project, with each member focusing on their respective tasks. Below is a detailed breakdown of individual contributions and plans for the upcoming week.

**Tasks done this week:**

* Worked on the **ConvNext\_small** model using the **AffectNet database**.
* Observed that while the training accuracy increased to **77%**, the validation accuracy stagnated at **58%** after 70 epochs, indicating signs of overfitting.
* Pushed the updated code to the [GitHub Repository](https://github.com/Capstone-Project-CCNY/AI-Driven-Mental-Disorder-Detection-).
* **Next Steps:** Switch to **ConvNext\_base** next week to experiment with a larger model architecture and aim for improved validation accuracy.
* The GCP data modeling task is still in progress and will be completed in the coming week.
* Initiated frontend development by designing and implementing the main page along with three key components: **Home, Sign In, and About pages**.
* Created an overall **UI/UX design layout** for the interactive frontend.
* Pushed frontend changes to GitHub under a newly created frontend-dev feature branch.
* Currently researching sign-in and user authentication features for secure access integration.
* Started work on **authentication module**. Made progress on implementing secure authentication features.
* Faced a challenge due to the lack of high-performance GPUs on local machines within the team, which is essential for data modeling and training deep learning models.
* Based on peer discussions, began exploring Google Cloud Platform (GCP) as a potential solution for leveraging free or affordable GPU resources.
* Currently learning how to set up GPU-enabled VMs and perform data modeling/training workflows using GCP.

**Next Steps for the Team:**

* **Optimize model performance** by experimenting with ConvNext\_base and addressing overfitting.
* Finalize and integrate the user authentication module with **frontend and backend APIs**.
* Add **real-time photo capture functionality** for user input.
* Optimize the UI/UX for responsiveness and accessibility.
* Begin testing the frontend with backend endpoints to enable full pipeline integration.
* **Finalize authentication** and enhance frontend usability.
* Complete GCP environment setup with GPU support for data modeling and training.
* Implement preprocessing and training pipeline on GCP and test with a small dataset.
* Monitor resource usage to stay within free-tier limits or available credits.

**Project Resources:**

* [GitHub Code link](https://github.com/Capstone-Project-CCNY/AI-Driven-Mental-Disorder-Detection-)
* [JIRA board](https://dsalimkumar.atlassian.net/jira/software/projects/SCRUM/boards/1/backlog)