**User Manual: Mcity Data engine embedding Workflow for Fish Eye 8K on Google Colab**

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**1. Introduction**

This manual provides detailed steps for running the Mcity data engine workflow for embedding using opensource Fish Eye 8K camera data using notebook in Google Colab.

**2. Prerequisites**

Before proceeding, ensure you have:

* A Google account
* Access to Google Colab (<https://colab.research.google.com/>)
* A stable internet connection

**3. Step-by-Step Instructions**

**Step 1:** Creating a Google Colab Workspace

1. Open your web browser and navigate to [Google Colab](https://colab.research.google.com/).
2. Sign in with your Google account if prompted.

**Step 2:** Change Runtime type to T4 GPU on Colab

1. Click on Runtime in the menu bar.
2. Select Change runtime type.
3. Under Hardware accelerator, choose T4 GPU.
4. Click Save to apply changes**.**

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**Step 3:** Connecting to Colab

1. Click the Connect button in the top-right corner.
2. Wait until you see a green checkmark indicating that the runtime is connected.

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**Step 4:** Downloading the Required Notebook

1. Open the following link: [Fish Eye 8K Notebook](https://github.com/mcity/mcity_data_engine/blob/main/fish_eye_8k_colab.ipynb).
2. Click the Download button to save the file to your local machine.

**Step 5:** Uploading and Running the Notebook

1. In Google Colab, click on the File menu and select Upload Notebook.
2. Choose the downloaded ***fish\_eye\_8k\_colab.ipynb*** file and upload it.
3. Once uploaded, click Run All to execute the notebook.

**4. Handling Errors and Troubleshooting**

* If Colab requests a session restart after installing requirements, ignore the error and proceed.
* The Voxel51 app may take 1-2 minutes to launch, depending on your internet speed.
* If no images appear in the Samples Panel or Embeddings Panel, manually click on the Samples or Embeddings tab to load them (refer Voxel51 [Tutorial](https://docs.voxel51.com/tutorials/image_embeddings.html)).

**5. Additional Notes and Best Practices**

* Always ensure your runtime is set to GPU for optimal performance.
* Keep an eye on execution logs for warnings or errors.
* Save your work frequently to avoid losing progress.

By following this manual, you will be able to execute the Fish Eye 8K notebook in Google Colab efficiently. Happy coding!