User Manual: Photon Correlation for Two Qubit Using 1-Dimensional Detector

Repository

May 11, 2024

1 Introduction

This user manual provides detailed instructions on how to deploy and use the software developed for studying photon correlation in a two-qubit system using a one-dimensional detector. This document complements the code and data available in the GitHub repository.

2 System Requirements

The software has been tested and used on an Acer Aspire 5 laptop with the following specifications:

- Processor: Intel Core i5
- RAM: 16 GB
- Operating System: Windows 10

It is recommended to use a system with similar or higher specifications for optimal performance.

3 Repository Contents

- **DC_initial_approach.ipynb**: Notebook containing the initial approach.
- **DC_improved.ipynb**: Notebook containing the improved code with chunking.
- **DC_final.ipynb**: Notebook containing the final code for deployment.
- **app.py**: Deployment script for the web application.
- **DC_Report.pdf**: Detailed report of the project.
- **DC.csv**: Example dataset used in this project.
- **User_Manual**: This document.

4 Installation

To run the project, follow these steps:

1. Clone the repository: `git clone https://github.com/anuj-l22/DC_Project.git`
2. Navigate to the repository directory: `cd repository-name`
3. Install required packages: `pip install streamlit numpy pandas matplotlib`

5 Deploying the Application

To deploy the application using Streamlit:

1. Run the application: `streamlit run app.py`
2. Access the application through a web browser at `http://localhost:8500`

6 Using the Application

Describe how to use the application with the following placeholders:

- **Input**: Input is with 2 columns of data CSV files, number of rows.
- **Output**: Output will be a csv file

7 Example Usage

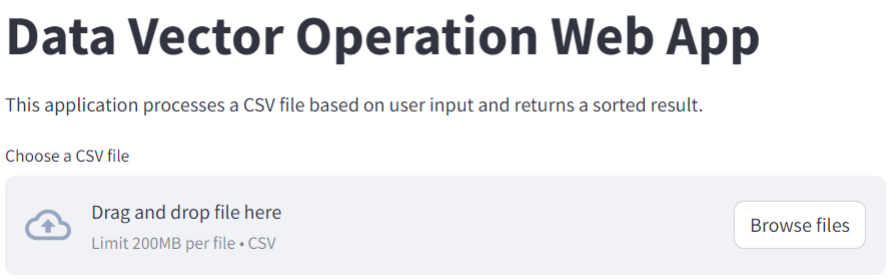

Figure 1: Input

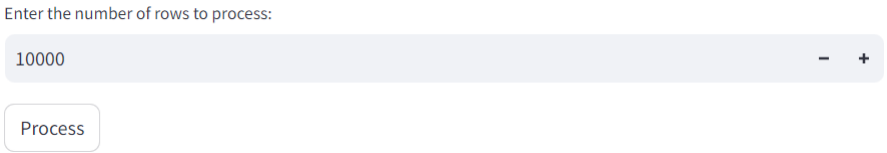

Figure 2: Input no of rows

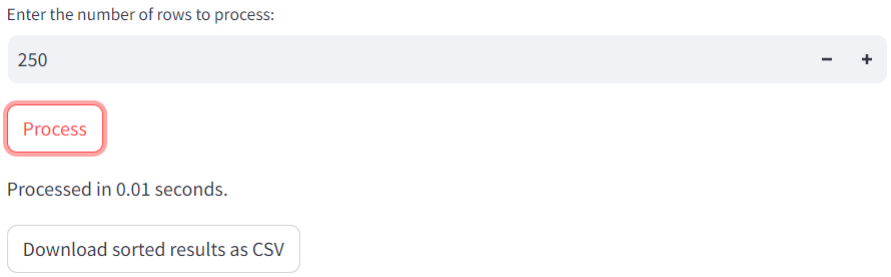

Figure 3: Output

8 Notes and Tips

- Ensure that your input data is correctly formatted as per the specifications in DC.csv which is a csv file with 2 columns of data
- The computational performance may vary depending on your system's specifications and workload.