Image Shadow Removal

Description

Your task is to implement an image shadow removal module and integrate it into a robotic system. It takes in (subscribe to) the original images and outputs (publish) the cleaner images after shadow removal.

Key Tasks

1. Git Repository Management. Create and maintain a Git repository for all code and documentation. Ensure meaningful commit history (single-commit history not acceptable)

Keep commit messages clear and concise. Use git submodule for external packages. Avoid direct code copying to maintain version history. Repository should be shareable (no confidential information).

1. Dataset Creation and Model Development. Describe how the dataset is generated (by yourself? Open source? Why this dataset?). Document dataset guidelines. Model Development Design/choose model architecture suitable for CPU inference.
2. Implement model optimization techniques: Model quantization/distillation if needed.
3. Service Interface Development. Implement ROS Support.
4. Project Presentation. Present the following aspects:
   1. Dataset introduction.
   2. Model selection and optimization considerations.
   3. CPU acceleration strategies.
   4. Training process and results.

Focus on creating a functional prototype rather than production-ready model Balance between model accuracy and CPU performance Reasonable accuracy is acceptable, but CPU optimization is crucial. Document performance metrics on CPU.

Use the following test images and give the results:

人骑着自行车在路上

描述已自动生成

人走在路上

描述已自动生成

狗站在地上

描述已自动生成