Computer Vision

Assignment 2

Due on Monday 25th November, 2024 at 11:59 pm

Objective:

The purpose of this assignment is to gain hands-on experience with two popular corner detection algorithms: **Moravec Corner Detection** and **Harris Corner Detection**. You will implement these methods in Python, apply them to a given image, and analyze their performance.

Instructions:

1. **Download the Dataset:**
   - Use the provided image **chess.png**.
2. **Implementation:**
   - Implement **Moravec Corner Detection** in Python.
   - Implement **Harris Corner Detection** in Python.
3. **Visualization:**
   - Plot the input image with detected corners for both methods.
   - Use markers to highlight detected corners (e.g., red for Moravec and green for Harris).
4. **Analysis and Comparison:**
   - Write a report including:
   - The methodology of each algorithm (2-3 lines).
   - The Python implementation for both methods.
   - The results: Include visual outputs (images with corners marked).

- Discuss the differences in the number of detected corners, corner distribution, and robustness to noise.

Deliverables:

- Python scripts for both **Moravec** and **Harris** implementations.
- A report (in PDF or Word format) summarizing:
  - Implementation details.
  - Results (with visual evidence).
  - Observations and comments on the performance and differences.

Submission:

- Deadline: Monday, November 25th, 2024 at 11:59 pm.
- Upload all your work **as a single .zip file** on Google Drive and Submit the Google Drive shareable link to the following e-mail: Youssef.abdel-rahman@guc.edu.eg

Not following the mentioned guidelines, the assignment will not be graded.

Cheating cases will not be tolerated. Both teams will get a zero in the assignment if detected. No exception