

AI & Tools Appendix

Course: CSE5283 – Computer Vision

Assignment: Camera Calibration with Gradio UI

Student: Raghavendra Hulyurdurga Mallesha, Akhilesh Katari

Date: 09/04/2025

Tool & Model Used

- **Tool:** ChatGPT (GPT-5)
- **Date/Times Used:** August–September 2025

Purpose of AI Use

I used ChatGPT to:

1. Clarify assignment instructions (e.g., what deliverables are needed).
2. Help with debugging issues in Colab (e.g., image overlays not displaying, JSON file errors).
3. Provide suggestions to structure my notebook into helper classes (IO, Board, Calib, Overlay, Viz).

I did **not** use ChatGPT to generate calibration results. The images, calibration process, and final outputs (intrinsics, distortion coefficients, camera poses) were produced directly by my notebook and camera data.

Prompts & Responses

Prompt 1

"I'm not able to see overlays and undistortion preview in Colab"

ChatGPT Response (reading):

"This is a common Gradio limitation in Colab. Instead of relying on Gradio to preview images, you can use matplotlib to force-display results inline. Example:

```
img = cv2.imread(overlays[0])  
  
plt.imshow(cv2.cvtColor(img, cv2.COLOR_BGR2RGB))  
  
plt.axis('off')  
  
plt.show()
```

This guarantees your overlays display correctly."

Prompt 2

"How to put everything in GitHub according to assignment conditions"

ChatGPT Response (reading):

"Your repo should include:

- cam_model.ipynb (self-contained notebook)
- calibration.json

- /out/ folder with camera_poses.png, overlays, undistortion preview
- README.md with setup instructions
- AI_Appendix.pdf"

◆ Reflection

Using ChatGPT saved me time in debugging and organizing the code structure. However, I still needed to:

- Capture my own calibration images.
- Run and verify calibration in Colab.
- Interpret the results (intrinsics, distortion, reprojection error).
- Prepare the presentation.

This ensured I understood the material and used AI as a **support tool**, not a substitute for learning.