

README

Directory Structure:

- **Code:** contains the code.
 - **FNR:** Full-chain Nonlinearity Rectification, corresponding to Section III.
 - **Main_Exp_Simu_OPWM.m:** script file for Optimal PWM Fringe Pattern
 - **Main_Exp_CNRC.m:** script file for Camera Nonlinear Response Correction
 - **CameraResponseCalibration:** images for camera response function calibration
 - **BSC&PSPU:** Binomial Self-Compensation (BSC) and Paraxial Stereo Phase Unwrapping (PSPU), corresponding to Section IV. and V.
 - **Main_Script.m:** script file for P-BSC/I-BSC and PSPU
 - **Func_PBSC:** this function conducts phase-sequential binomial self-compensation for motion error in the phase map, corresponding to Section IV. A.
 - **Func_IBSC:** this function conducts image-sequential binomial self-compensation for motion error in the phase map, corresponding to Section IV. B.
 - **Func_Compute3D_PSPU:** this function unwraps the high-frequency phase of both left and right cameras by paraxial stereo phase unwrapping, corresponding to Section V, and then compute 3D point clouds.
 - **Package:** other functions.
- **Data:** contains calibration files and captured images
 - **mCamera1Rectified.mat:** calibration matrices of the main camera
 - **mCamera2Rectified.mat:** calibration matrices of the auxiliary camera
 - **mProjector.mat:** calibration matrices of the projector
 - **Tissue:** 50 frames of captured images measuring waving tissue
 - **Statue:** 50 frames of captured images measuring dynamic gypsum statue
- **Videos:** contains the videos for comparing the phase unwrapping results w/ and w/o our BSC and PSPU
 - **Butterfly.mp4:** wooden butterfly model with wings flapping

- **Statue.mp4:** moving statue