Assignment 1: NLOS imaging

Conventional intensity cameras recover objects in the direct line-of-sight of the camera, whereas occluded scene parts are considered lost in this process. Non-line-of-sight imaging (NLOS) aims at recovering these occluded objects by analyzing their indirect reflections on visible scene surfaces and unmixing the direct and indirect light channels based their travel time.

Task 1. Seeing Around Corners with Edge-Resolved Transient Imaging

Read paper Rapp, J., Saunders, C., Tachella, J. et al. Seeing around corners with edge-resolved transient imaging. Nat Commun 11, 5929 (2020). https://doi.org/10.1038/s41467-020-19727-4

Based on the given code provide investigation of:
1) reconstruction of different hidden scenes
2) impact of different acquisition times (only for real hidden scenes).

Task 2 (optional). Computational Periscopy with an Ordinary Digital Camera

Read paper C. Saunders, J. Murray-Bruce, and V. K. Goyal, Computational Periscopy with an Ordinary Digital Camera, Nature, vol. 565, pp. 472-475, 24 Jan 2019.

Based on the given code provide investigation of:
1) reconstruction of different hidden objects (fig4_column_c.m, fig4_column_d.m, fig4_column_e.m)

Task 3 (optional). Propose other existing or your own method of NLOS method

All results complete into report and send it with subject "Chosen chapters: computational imaging" to Taras.Holotyak@unige.ch