Compressive Light Field Photography using Overcomplete Dictionaries and Optimized Projections

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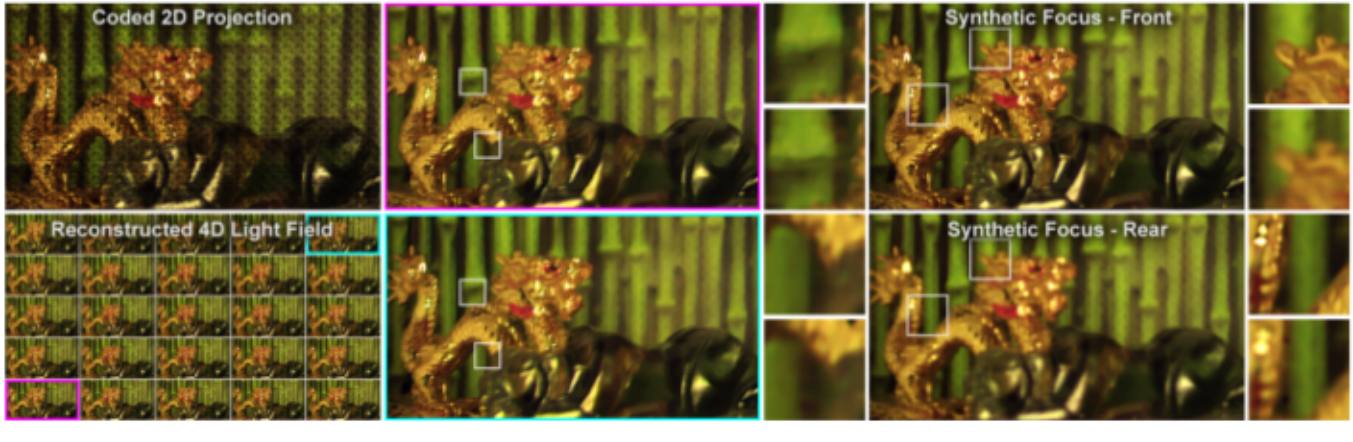

Figure 1: *Light field reconstruction from a single coded projection. We explore sparse reconstructions of 4D light fields from optimized 2D projections using light field atoms as the fundamental building blocks of natural light fields. This example shows a coded sensor image captured with our camera prototype (upper left), and the recovered 4D light field (lower left and center). Parallax is successfully recovered (center insets) and allows for post-capture refocus (right). Even complex lighting effects, such as occlusion, specularity, and refraction, can be recovered, being exhibited by the background, dragon, and tiger, respectively.*