| Popular science summary of the PhD thesis | |
| --- | --- |
|  |  |
|  |  |
| PhD student | Alessandro Dal Corso |
|  |  |
| Title of the PhD thesis | Towards interactive photorealistic rendering |
|  |  |
| PhD school/Department | DTU Compute |
|  |  |
|  | |
| Science summary | |
| \* Please give a short popular summary in Danish or English (approximately half a page) suited for the publication of the title, main content, results and innovations of the PhD thesis also including prospective utilizations hereof. The summary should be written for the general public interested in science and technology: | |
| In many fields, including manufacturing, product design and entertainment, it is becoming more and more important to generate photorealistic images, or that look like real life. In these various fields, we also need fast feedback, as it is not possible to wait hours and hours for images to be generated. So, our image generation process, or rendering, needs to be both interactive and photorealistic. In this thesis, we contribute within this spectrum with two novel techniques suitable for graphics processing units (GPUs), improving the accuracy of rendering of translucent materials and temporal stability in globally illuminated scenes. We also describe a new application of interactive rendering, that can be used to compare rendering and photographs. These comparisons can be used to estimate the physical properties of objects, such as how object reflect, diffuse and absorb light. In general, the thesis show how it is possible to use data structures to enable rendering techniques to handle complex light interaction effects. | |

Please email the summary to the PhD secretary at the department