

1086-AD-285

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*Non-parametric image optimization.*

Patch-based methods have shown tremendous promise for solving a range of optimization problems in image and video analysis, editing, and synthesis. Until recently these methods were too costly for practical use, due to the high cost of approximate nearest-neighbor searches in high-dimensional patch space. In this talk I'll describe the PatchMatch nearest-neighbor algorithm, which accelerates these methods while using less memory than previous approaches, and several follow-on projects that utilize the same core ideas. Although our current projects revolve mostly around static image manipulation, I'll also discuss the impact these approaches may have on film and video production in the future. (Received August 15, 2012)