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A Low-Cost Vector Processor Boosting Compute-Intensive Image Processing Operations

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Low-cost vector processing (VP) is within reach to everyone seriously engaged in scientific computing. The advent of affordable add-on VP-boards for standard workstations complemented by mathematical/ statistical libraries is beginning to impact compute-intensive tasks such as image processing. A case in point is the restoration of distorted images from the Hubble Space Telescope. A low-cost implementation is presented of the standard Tarasko-Richardson-Lucy restoration algorithm on an Intel i860-based VP-board which is seamlessly interfaced to a commercial, interactive image processing system. First experience is reported (including some benchmarks for standalone FFTs) and some conclusions are drawn.