

Some Examples of Performance of the MDSP Super-Resolution Software (SuperLab)

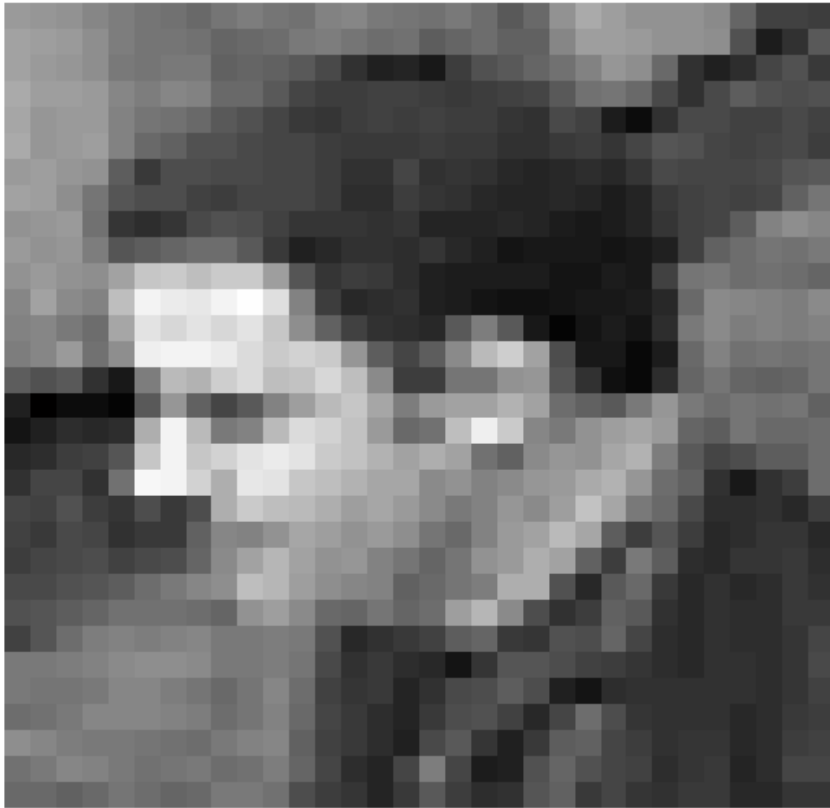
August 2004

The work implemented in this software at U.C. Santa Cruz was carried out as a result of a collaboration between the research group of Prof. Peyman Milanfar and Prof. Michael Elad of the Technion CS department. Sina Farsiu is the principal architect of the code, with significant contributions from Dirk Robinson, particularly on the motion estimation algorithms.

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Resolution enhancement of a face from a sequence captured by a surveillance camera



One Low-resolution Frame



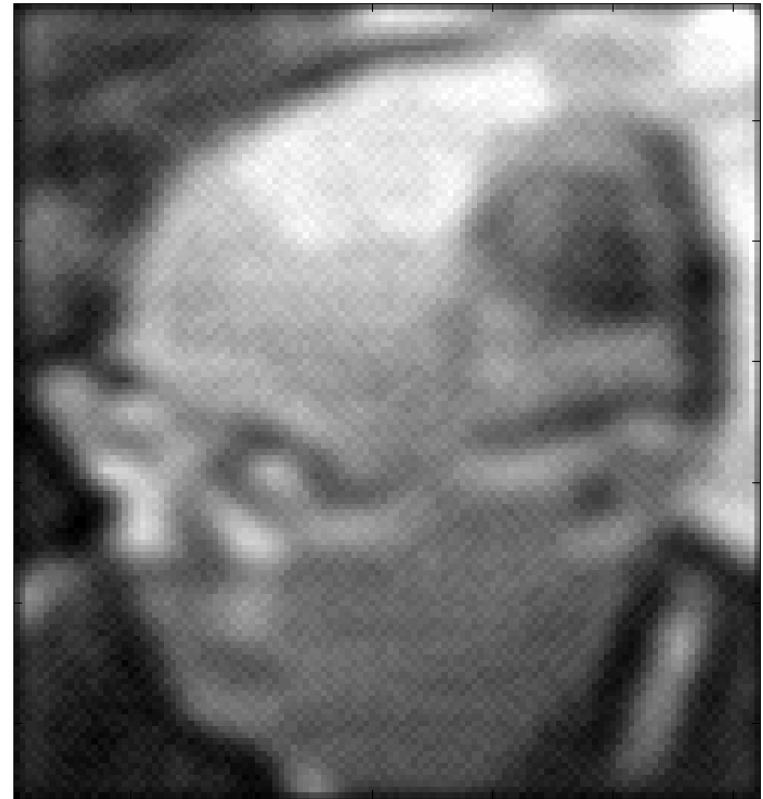
Output High-resolution Still Frame

40 input frames, resolution enhancement factor of x4

Resolution enhancement of a face from a sequence captured by a surveillance camera



One Low-Resolution Frame



Output High-resolution Still Frame

30 input frames, resolution enhancement factor of x4

Resolution enhancement from multiple still frames acquired with an Olympus C-4000 digital camera



One Low-Resolution Frame



Output High-resolution Still Frame

20 Input frames, resolution enhancement factor of x4

Resolution enhancement from still frame infrared images



One Low-Resolution Frame



Output High-resolution Still Frame

8 input frames, resolution enhancement factor of x4

Resolution enhancement from video frames captured by a commercial webcam (3COM Model No.3719)



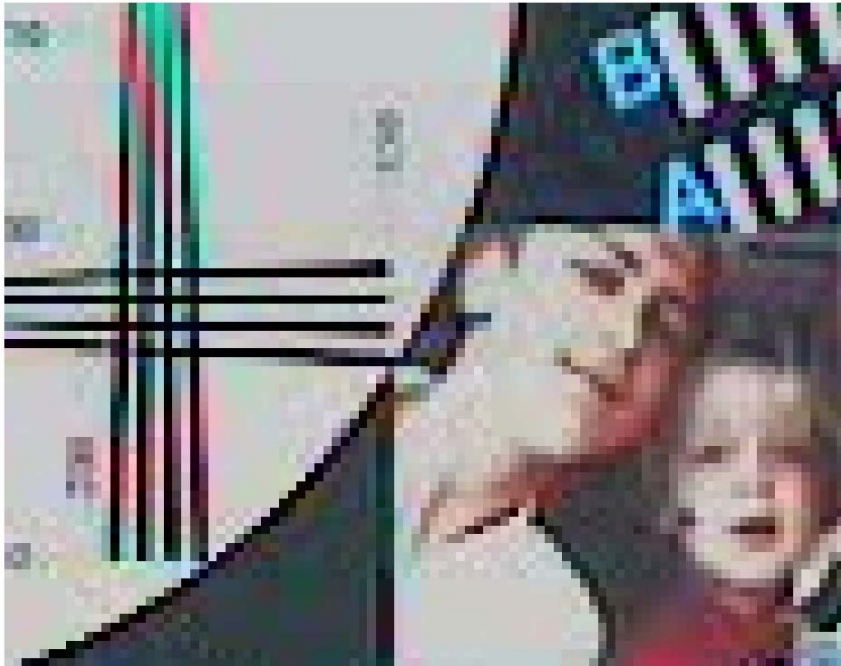
One Low-Resolution Frame



Output High-resolution Still Frame

53 input frames, resolution enhancement factor of x4

Resolution enhancement in color from a sequence captured by a commercial camera



One Low-Resolution Frame



Output High-resolution Still Frame

40 input frames, resolution enhancement factor of x4

Resolution enhancement in color from a video sequence captured by a Pyro 1394 webcam

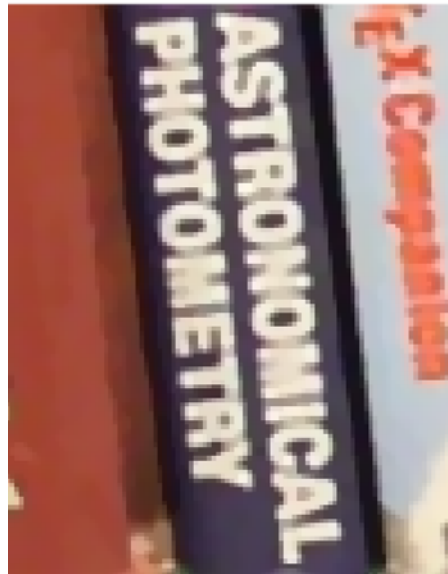


One Low-Resolution Frame

Output High-resolution Still Frame

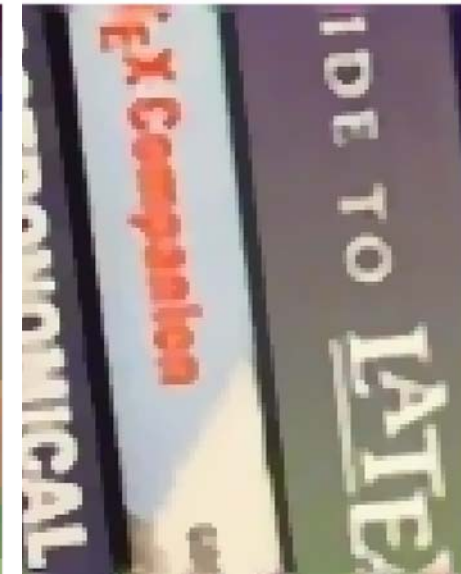
30 input frames, resolution enhancement factor of x4

Video-to-Video resolution enhancement of a sequence of Bayer color-filtered images (simultaneous resolution enhancement and demosaicing)



Input Frame
40

Output Frame
40



Input Frame
100

Output Frame
100

325 input frames, 325 output frames, resolution enhancement factor of x4