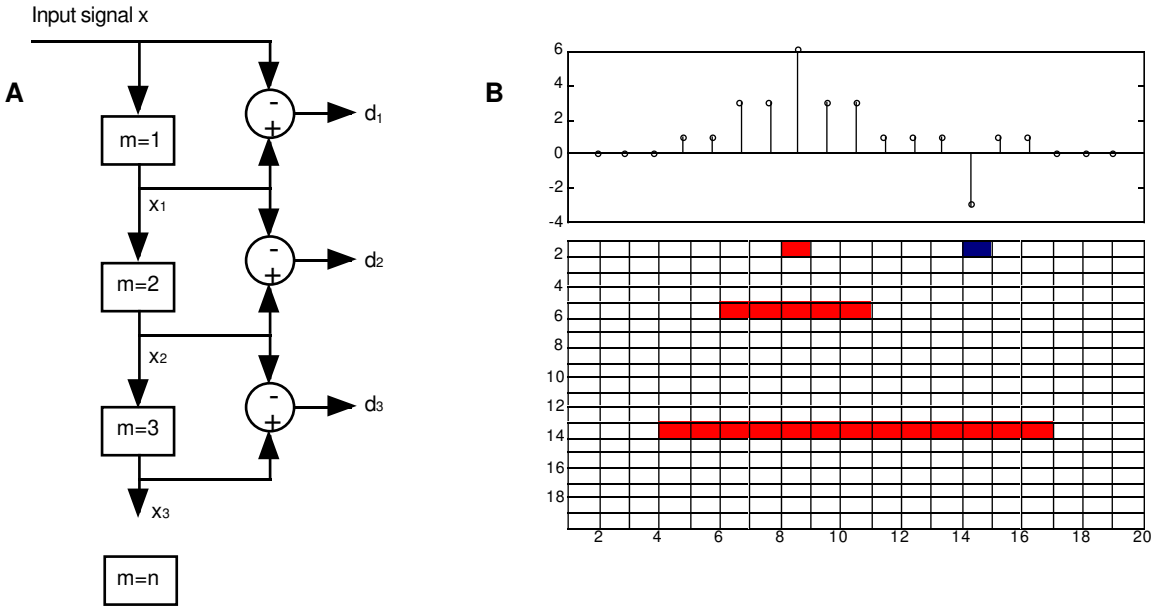

Figure 1. A. Schematic showing the arrangement of filters forming the sieve. **B.** Signal containing a pulse of width 13, a pulse of width 5, and two impulses; and its associated granularity decomposition.

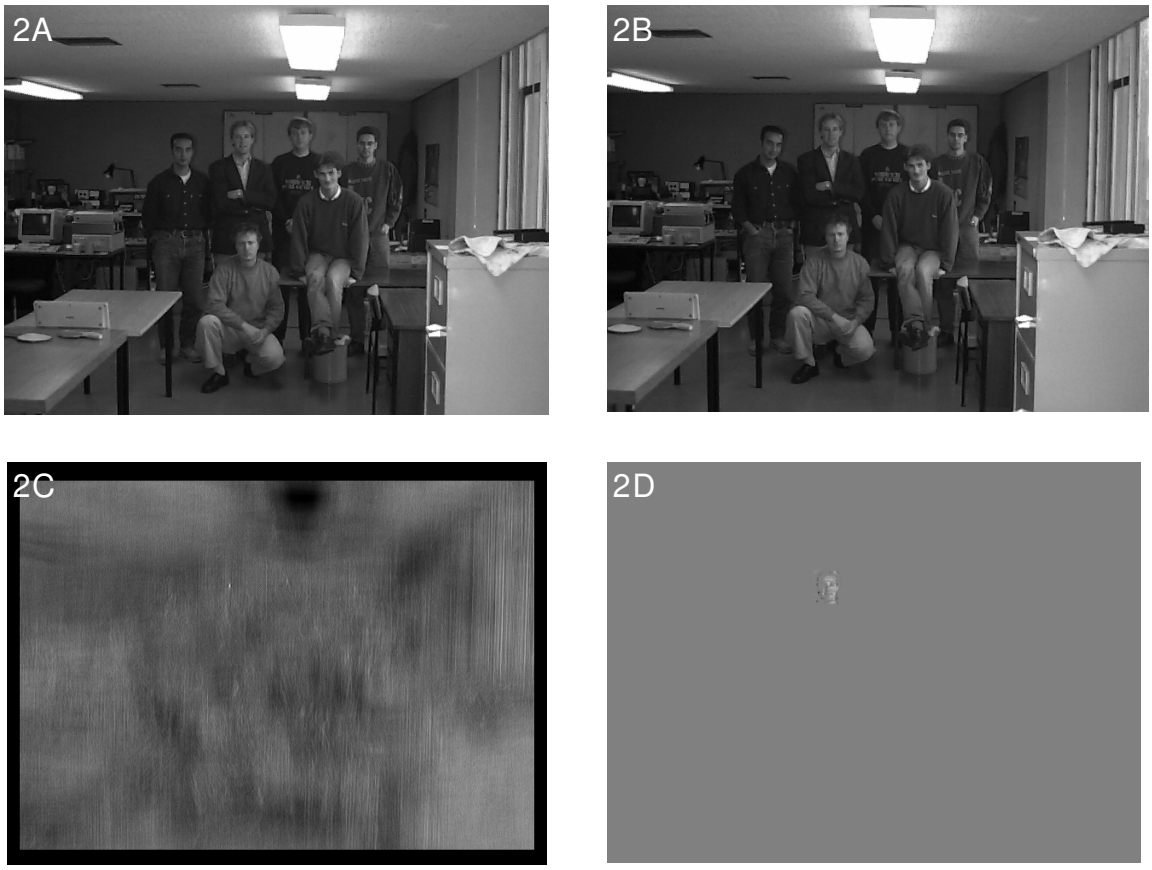

Figure 2: The matched sieve. **A** The image used form the mask; **B** the test image; **C** the score; **D** the reconstructed masked result.

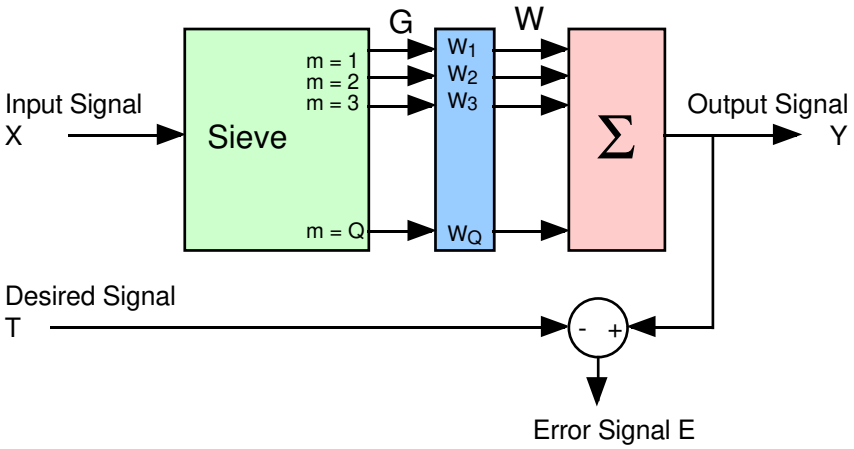

Figure 3: An adaptive sieve adapted using the Widrow-Hoff LMS algorithm

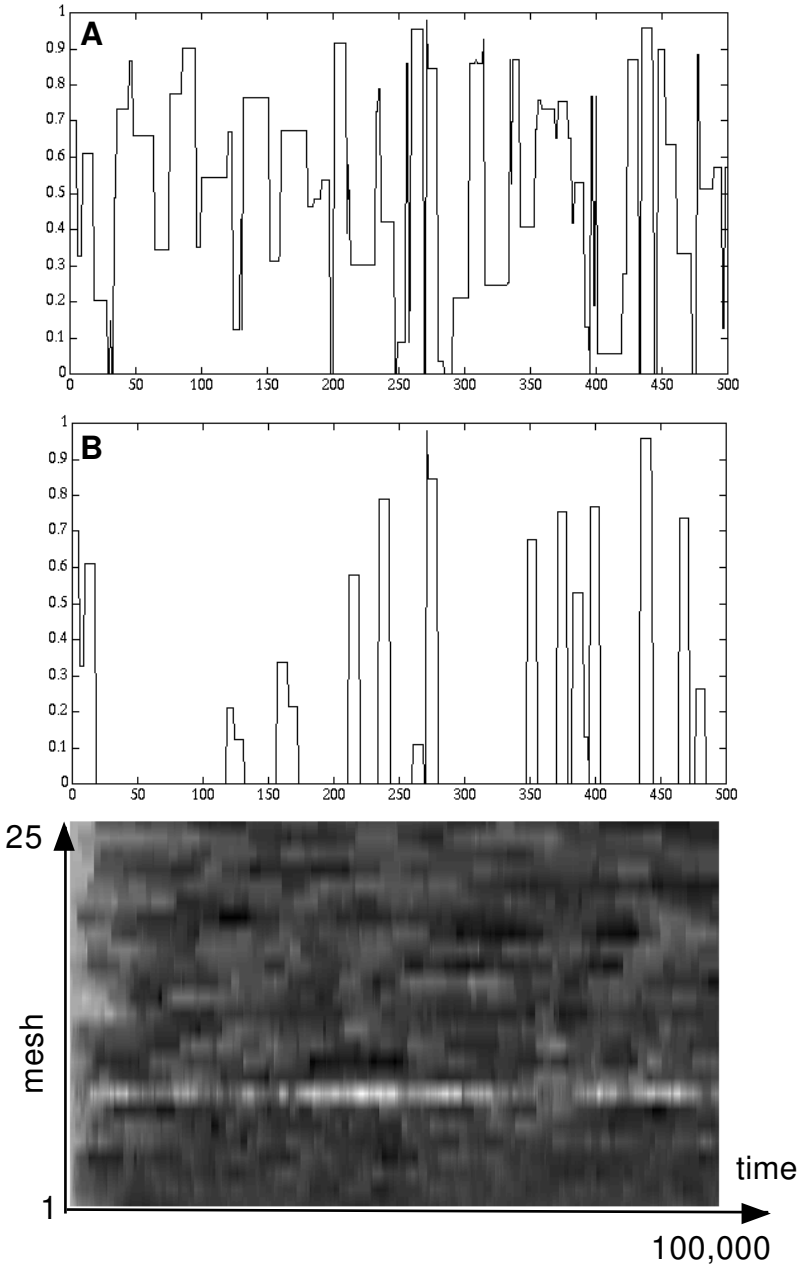

Figure 4: **A** The noisy signal; **B** the desired signal; **C** the adaptation (white=large weight)

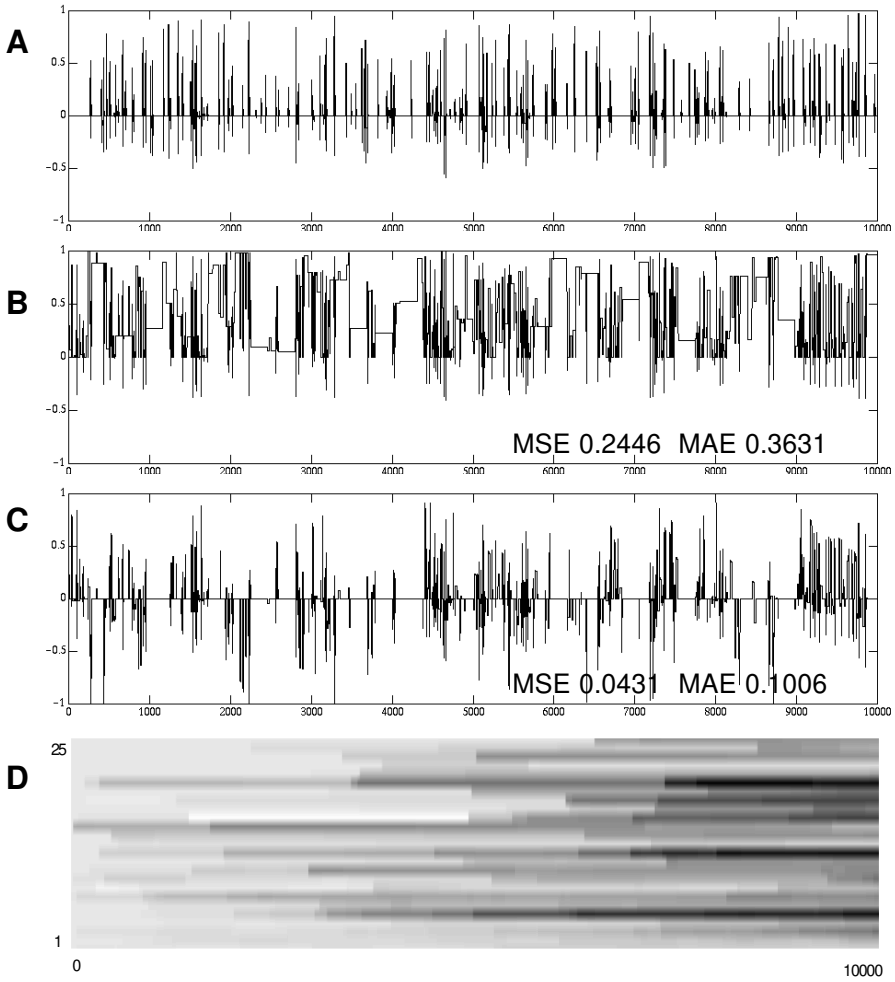

Figure 5. A. shows a signal containing objects of a given pattern. **B**. Shows the signal corrupted with replacement noise. **C.** Shows the result of filtering the signal with the LMS system. **D.** Shows the weights.

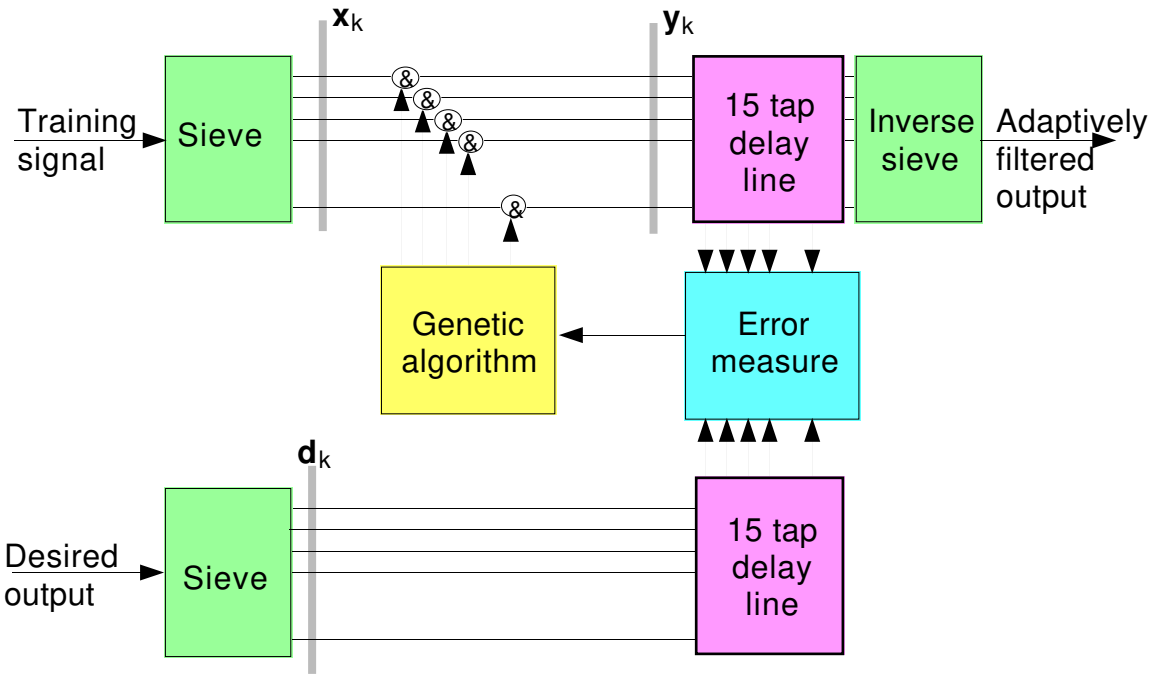

Figure 6: Schematic diagram of the Genetically Adaptive Filter

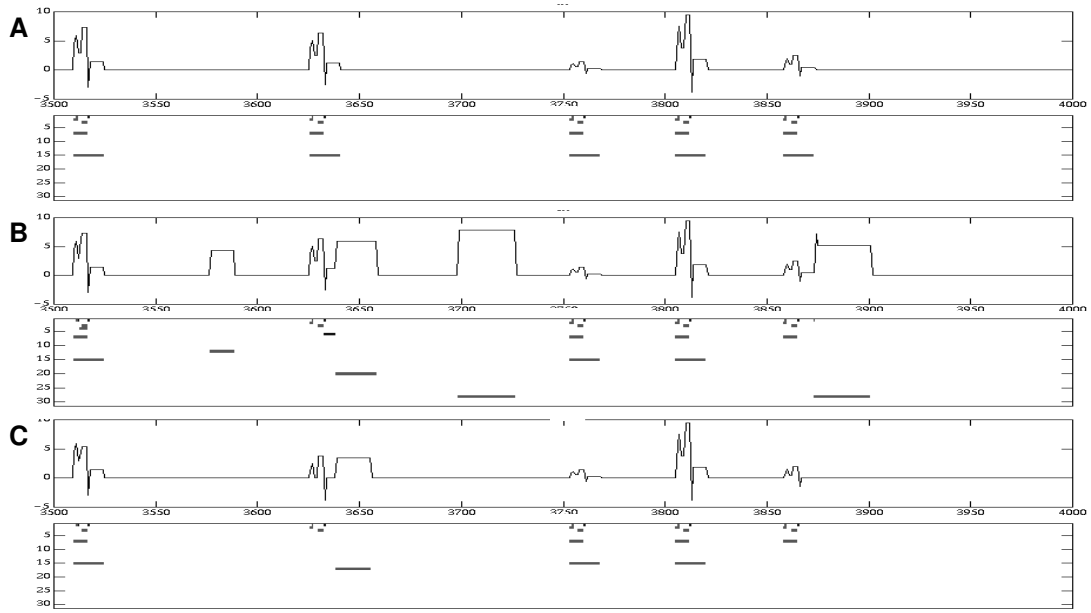

Figure 7. A. Shows a signal x(i) containing objects of a given pattern. **B.** Shows the signal n(i), x(i) corrupted with replacement noise. **C.** Shows the result of filtering the signal, using the adapted system.

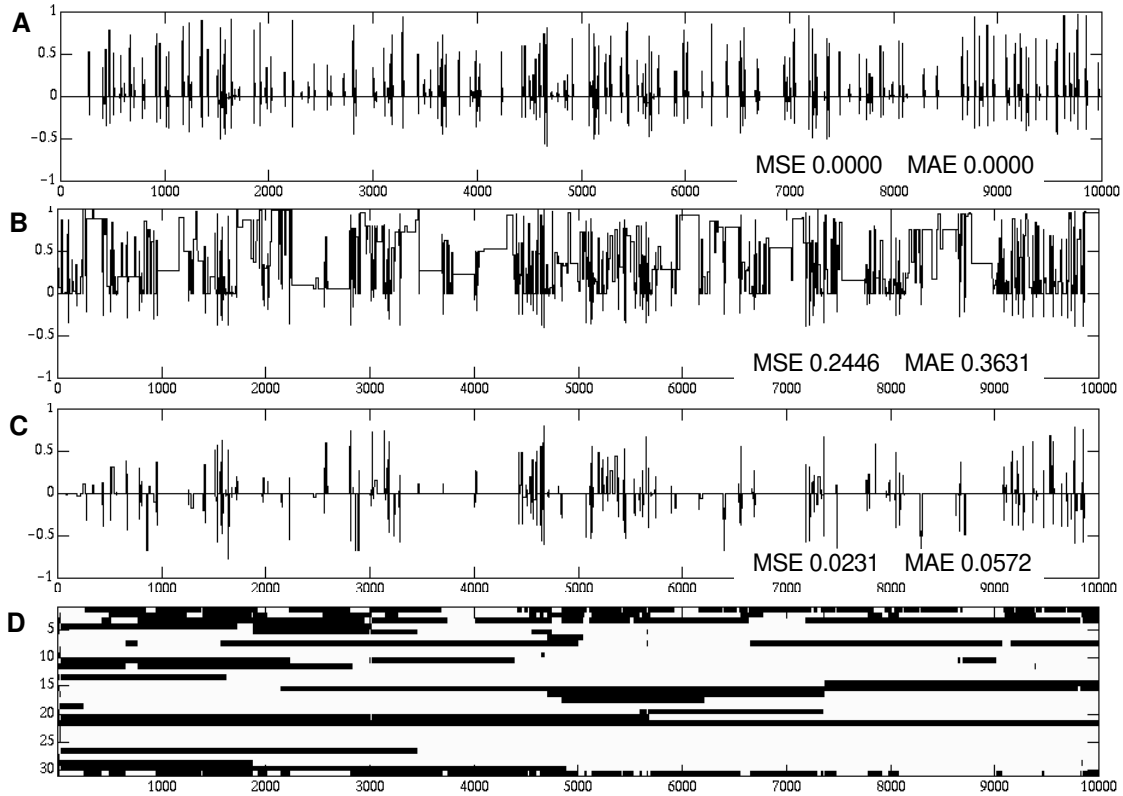

Figure 8. A. shows a x(i) signal containing objects of a given pattern, **B**. Shows the signal n(i), x(i) corrupted with replacement noise. **C.** Shows the result of filtering the signal with the adapting system. **D.** Shows the best chromosome in the population, for the position i.