Title (en)

FAST SIGNAL CONVOLUTION USING SEPARATED-SPLINE KERNEL

Title (de)

VERFAHREN UND VORRICHTUNG ZUR SCHNELLEN SIGNALFALTUNG MIT SEPARIERTEM SPLINE-KERN

Title (fr)

PROCEDE ET APPAREIL DE CONVOLUTION DE SIGNAL RAPIDE UTILISANT UN NOYAU A FONCTION SPLINE SEPARE

Publication

EP 1527397 A2 20050504 (EN)

Application

EP 02774117 A 20020524

Priority

- US 0216475 W 20020524
- US 86689001 A 20010529

Abstract (en)

[origin: WO02097655A2] A fast convolution method applicable to convolving a signal (indicative of an n-dimensional pattern, where n is greater than or equal to two) with a smooth kernel that can be approximated by a separated-spline kernel, and a system configured to perform such method using software or signal processing cirucitry. Unlike Fourier-based convolution methods which require on the order of N log N arithmetic operations for a signal of length N , the method of the invention requires only on the order of N arithmetic operations to do so. Unlike wavelet-based convolution approximations (which typically also require more arithmetic operations than are required in accordance with the invention to convolve the same signal), the method of the invention is exact for convolution kernels which are spline kernels.

IPC 1-7

G06F 17/15

IPC 8 full level

G06F 17/10 (2006.01); **G06F 17/15** (2006.01); **G06T 5/20** (2006.01)

CPC (source: EP KR)

G06F 17/10 (2013.01 - KR); **G06F 17/15** (2013.01 - EP); **G06T 5/20** (2013.01 - EP)

Citation (search report)

See references of WO 02097655A2

Designated contracting state (EPC)

AT BE CH DE GB LI NL

DOCDB simple family (publication)

WO 02097655 A2 20021205; **WO 02097655 A3 20050303**; EP 1527397 A2 20050504; JP 2005517999 A 20050616;
KR 100839391 B1 20080620; KR 20040011514 A 20040205; TW I220482 B 20040821

DOCDB simple family (application)

US 0216475 W 20020524; EP 02774117 A 20020524; JP 2003500767 A 20020524; KR 20037015469 A 20031127; TW 91111503 A 20020529