# Tian-Sheuan Chang

List of Publications by Year
in descending order

| 134 papers | 2,072 citations | 394421 19 h-index | 330143 37 g-index |
|---|---|---|---|
| 135 all docs | 135 docs citations | 135 times ranked | 1304 citing authors |

| # | ARTICLE | IF | CITATIONS |
|---|---------|-----|-----------|
| 1 | On the data reuse and memory bandwidth analysis for full-search block-matching VLSI architecture. IEEE Transactions on Circuits and Systems for Video Technology, 2002, 12, 61-72. | 8.3 | 246 |
| 2 | Fast SIFT Design for Real-Time Visual Feature Extraction. IEEE Transactions on Image Processing, 2013, 22, 3158-3167. | 9.8 | 150 |
| 3 | Algorithm and Architecture of Disparity Estimation With Mini-Census Adaptive Support Weight. IEEE Transactions on Circuits and Systems for Video Technology, 2010, 20, 792-805. | 8.3 | 105 |
| 4 | Mitigating Asymmetric Nonlinear Weight Update Effects in Hardware Neural Network Based on Analog Resistive Synapse. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2018, 8, 116-124. | 3.6 | 87 |
| 5 | A new RSA cryptosystem hardware design based on Montgomery's algorithm. IEEE Transactions on Circuits and Systems Part 2: Express Briefs, 1998, 45, 908-913. | 2.2 | 77 |
| 6 | A simple processor core design for DCT/IDCT. IEEE Transactions on Circuits and Systems for Video Technology, 2000, 10, 439-447. | 8.3 | 66 |
| 7 | Real-time high-definition stereo matching on FPGA. , 2011, , . | | 62 |
| 8 | Fast Three Step Intra Prediction Algorithm for 4x4 blocks in H.264. , 0, , . | | 58 |
| 9 | A Hardware-Efficient H.264/AVC Motion-Estimation Design for High-Definition Video. IEEE Transactions on Circuits and Systems I: Regular Papers, 2008, 55, 1526-1535. | 5.4 | 54 |
| 10 | Fast Motion Estimation Algorithm and Design for Real Time QFHD High Efficiency Video Coding. IEEE Transactions on Circuits and Systems for Video Technology, 2015, 25, 1533-1544. | 8.3 | 54 |
| 11 | A Fast Algorithm and Its VLSI Architecture for Fractional Motion Estimation for H.264/MPEG-4 AVC Video Coding. IEEE Transactions on Circuits and Systems for Video Technology, 2007, 17, 578-583. | 8.3 | 52 |
| 12 | A 140-MHz 94 K Gates HD1080p 30-Frames/s Intra-Only Profile H.264 Encoder. IEEE Transactions on Circuits and Systems for Video Technology, 2009, 19, 432-436. | 8.3 | 52 |
| 13 | An in-place architecture for the deblocking filter in H.264/AVC. IEEE Transactions on Circuits and Systems Part 2: Express Briefs, 2006, 53, 530-534. | 2.2 | 46 |
| 14 | Data and Hardware Efficient Design for Convolutional Neural Network. IEEE Transactions on Circuits and Systems I: Regular Papers, 2018, 65, 1642-1651. | 5.4 | 45 |
| 15 | A memory-efficient realization of cyclic convolution and its application to discrete cosine transform. IEEE Transactions on Circuits and Systems for Video Technology, 2005, 15, 445-453. | 8.3 | 39 |
| 16 | Sub-nA Low-Current HZO Ferroelectric Tunnel Junction for High-Performance and Accurate Deep Learning Acceleration. , 2019, , . | | 34 |
| 17 | VWA: Hardware Efficient Vectorwise Accelerator for Convolutional Neural Network. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 145-154. | 5.4 | 31 |
| 18 | RangeSeg: Range-Aware Real Time Segmentation of 3D LiDAR Point Clouds. IEEE Transactions on Intelligent Vehicles, 2022, 7, 93-101. | 12.7 | 31 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 19 | VLSI Architecture for Real-Time HD1080p View Synthesis Engine. IEEE Transactions on Circuits and Systems for Video Technology, 2011, 21, 1329-1340. | 8.3 | 29 |
| 20 | Hardware-efficient DFT designs with cyclic convolution and subexpression sharing. IEEE Transactions on Circuits and Systems Part 2: Express Briefs, 2000, 47, 886-892. | 2.2 | 28 |
| 21 | Stereoscopic images generation with directional Gaussian filter. , 2010, , . |  | 28 |
| 22 | A Secure File Sharing System Based on IPFS and Blockchain. , 2020, , . |  | 28 |
| 23 | Low-power FIR filter realization with differential coefficients and inputs. IEEE Transactions on Circuits and Systems Part 2: Express Briefs, 2000, 47, 137-145. | 2.2 | 26 |
| 24 | Fast block type decision algorithm for intra prediction in H.264 FRext. , 2005, , . |  | 26 |
| 25 | Challenges and opportunities toward online training acceleration using RRAM-based hardware neural network. , 2017, , . |  | 26 |
| 26 | A 124 Mpixels/s VLSI Design for Histogram-Based Joint Bilateral Filtering. IEEE Transactions on Image Processing, 2011, 20, 3231-3241. | 9.8 | 24 |
| 27 | A zero-skipping multi-symbol CAVLC decoder for MPEG-4 AVC/H.264. , 0, , . |  | 23 |
| 28 | Low Memory Cost Block-Based Belief Propagation for Stereo Correspondence. , 2007, , . |  | 20 |
| 29 | A 242mW 10mm$^2$ 1080p H.264/AVC High-Profile Encoder Chip. , 2008, , . |  | 20 |
| 30 | NV-BNN. , 2019, , . |  | 20 |
| 31 | Bare Finger 3D Air-Touch System Using an Embedded Optical Sensor Array for Mobile Displays. Journal of Display Technology, 2014, 10, 13-18. | 1.2 | 19 |
| 32 | Low Complexity Formant Estimation Adaptive Feedback Cancellation for Hearing Aids Using Pitch Based Processing. IEEE/ACM Transactions on Audio Speech and Language Processing, 2014, 22, 1248-1259. | 5.8 | 19 |
| 33 | Determining motions with an IMU during level walking and slope and stair walking. Journal of Sports Sciences, 2020, 38, 62-69. | 2.0 | 19 |
| 34 | PMRME: A Parallel Multi-Resolution Motion Estimation Algorithm and Architecture for HDTV Sized H.264 Video Coding. , 2007, , . |  | 17 |
| 35 | A reconfigurable inverse transform architecture design for HEVC decoder. , 2013, , . |  | 16 |
| 36 | SIFME: A Single Iteration Fractional-Pel Motion Estimation Algorithm and Architecture for HDTV Sized H.264 Video Coding. , 2007, , . |  | 15 |

| # | Article | IF | Citations |
|---|---------|----|-----------| 
| 37 | Gradient-based PU size selection for HEVC intra prediction. , 2014, , . | | 15 |
| 38 | Fast intra prediction algorithm and design for high efficiency video coding. , 2016, , . | | 15 |
| 39 | A Low Cost Context Adaptive Arithmetic Coder for H.264/MPEG-4 AVC Video Coding. , 2007, , . | | 14 |
| 40 | Efficient Accelerator for Dilated and Transposed Convolution with Decomposition. , 2020, , . | | 14 |
| 41 | A Highly Efficient VLSI Architecture for H.264/AVC Level 5.1 CABAC Decoder. IEEE Transactions on Circuits and Systems for Video Technology, 2012, 22, 272-281. | 8.3 | 13 |
| 42 | A fast fractional pel motion estimation algorithm for H.264/MPEG-4 AVC. , 0, , . | | 11 |
| 43 | A QFHD 30-frames/s HEVC Decoder Design. IEEE Transactions on Circuits and Systems for Video Technology, 2016, 26, 724-735. | 8.3 | 11 |
| 44 | Sparse Compressed Spiking Neural Network Accelerator for Object Detection. IEEE Transactions on Circuits and Systems I: Regular Papers, 2022, 69, 2060-2069. | 5.4 | 11 |
| 45 | Optimal Data Mapping for Motion Compensation in H.264 Video Decoding. Signal Processing Systems Design and Implementation (siPS), IEEE Workshop on, 2007, , . | 0.0 | 9 |
| 46 | Architecture Design of Shape-Adaptive Discrete Cosine Transform and Its Inverse for MPEG-4 Video Coding. IEEE Transactions on Circuits and Systems for Video Technology, 2008, 18, 375-386. | 8.3 | 9 |
| 47 | Three-Dimensional Virtual Touch Display System for Multi-User Applications. Journal of Display Technology, 2013, 9, 921-928. | 1.2 | 9 |
| 48 | IMU Based Deep Stride Length Estimation With Self-Supervised Learning. IEEE Sensors Journal, 2021, 21, 7380-7387. | 4.7 | 9 |
| 49 | A 61MHz 72K Gates 1280Ã—720 30FPS H.264 Intra Encoder. , 2007, , . | | 8 |
| 50 | Real-Time Wearable Gait Phase Segmentation for Running And Walking. , 2020, , . | | 8 |
| 51 | A 1280Ã—720 Pixels 3OFrames/s H.264/MPEG-4 AVC Intra Encoder. , 0, , . | | 7 |
| 52 | A Fast Algorithm and Its Architecture for Motion Estimation in MPEG-4 AVC/H.264 Video Coding. , 2006, , . | | 7 |
| 53 | Low memory cost bilateral filtering using stripe-based sliding integral histogram. , 2010, , . | | 7 |
| 54 | Architecture Design of Belief Propagation for Real-Time Disparity Estimation. IEEE Transactions on Circuits and Systems for Video Technology, 2010, 20, 1555-1564. | 8.3 | 7 |

| # | ARTICLE | IF | CITATIONS |
|---|---------|----|-----------| 
| 55 | Perceptual multiband spectral subtraction for noise reduction in hearing aids. , 2010, , . | | 7 |
| 56 | Algorithm and Architecture Design of Bandwidth-Oriented Motion Estimation for Real-Time Mobile Video Applications. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2013, 21, 33-42. | 3.1 | 7 |
| 57 | Analysis and implementation of low-power perceptual multiband noise reduction for the hearing aids application. IET Circuits, Devices and Systems, 2014, 8, 516-525. | 1.4 | 7 |
| 58 | A hardware-efficient deblocking filter design for HEVC. , 2015, , . | | 7 |
| 59 | High Performance Context Adaptive Variable Length Coding Encoder for MPEG-4 AVC/H.264 Video Coding. , 2006, , . | | 6 |
| 60 | SoC Memory System Design. , 2006, , 73-118. | | 6 |
| 61 | Analysis of color space and similarity measure impact on stereo block matching. , 2008, , . | | 6 |
| 62 | A 94fps view synthesis engine for HD1080p video. , 2011, , . | | 6 |
| 63 | Fast intra prediction algorithm with transform domain edge detection for HEVC. , 2012, , . | | 6 |
| 64 | Stereo Matching and Viewpoint Synthesis FPGA Implementation. , 2013, , 69-106. | | 6 |
| 65 | VSCNN: Convolution Neural Network Accelerator with Vector Sparsity. , 2019, , . | | 6 |
| 66 | VSA: Reconfigurable Vectorwise Spiking Neural Network Accelerator. , 2021, , . | | 6 |
| 67 | Device quantization policy in variation-aware in-memory computing design. Scientific Reports, 2022, 12, 112. | 3.3 | 6 |
| 68 | The IC design of a high speed RSA processor. , 0, , . | | 5 |
| 69 | A Memory Bandwidth Optimized Interpolator for Motion Compensation in the H.264 Video Decoding. , 2006, , . | | 5 |
| 70 | 135-MHz 258-K Gates VLSI Design for All-Intra H.264/AVC Scalable Video Encoder. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2013, 21, 636-647. | 3.1 | 5 |
| 71 | Bare finger 3D air-touch system with embedded multiwavelength optical sensor arrays for mobile 3D displays. Journal of the Society for Information Display, 2013, 21, 381-388. | 2.1 | 5 |
| 72 | The IDCT processor on the adder-based distributed arithmetic. , 0, , . | | 4 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 73 | Hardware efficient transform designs with cyclic formulation and subexpression sharing. , 0, , . | | 4 |
| 74 | Fast motion estimation by adaptive early termination. , 0, , . | | 4 |
| 75 | Combined Frame Memory Motion Compensation for Video Coding. IEEE Transactions on Circuits and Systems for Video Technology, 2006, 16, 1280-1285. | 8.3 | 4 |
| 76 | A high throughput VLSI design with hybrid memory architecture for H.264/AVC CABAC decoder. , 2010, , . | | 4 |
| 77 | A low-power Mandarin-specific hearing aid chip. , 2010, , . | | 4 |
| 78 | A lossless embedded compression codec engine for HD video decoding. , 2012, , . | | 4 |
| 79 | Fast prediction unit selection for HEVC fractional pel motion estimation design. , 2013, , . | | 4 |
| 80 | Fast rate distortion optimization design for HEVC intra coding. , 2015, , . | | 4 |
| 81 | Hardware Efficient Skip Mode Detection for H.264/AVC. , 2008, , . | | 3 |
| 82 | Adaptive De-Interlacing With Robust Overlapped Block Motion Compensation. IEEE Transactions on Circuits and Systems for Video Technology, 2008, 18, 1437-1440. | 8.3 | 3 |
| 83 | RD Optimized Bandwidth Efficient Motion Estimation and Its Hardware Design With On-Demand Data Access. IEEE Transactions on Circuits and Systems for Video Technology, 2010, 20, 1565-1576. | 8.3 | 3 |
| 84 | Fast zero block detection and early CU termination for HEVC Video Coding. , 2013, , . | | 3 |
| 85 | Low complexity real time BCI for stroke rehabilitation. , 2015, , . | | 3 |
| 86 | Deep Gait Tracking With Inertial Measurement Unit. , 2019, 3, 1-4. | | 3 |
| 87 | A 14 $\mu$J/Decision Keyword-Spotting Accelerator With In-SRAMComputing and On-Chip Learning for Customization. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2022, 30, 1184-1192. | 3.1 | 3 |
| 88 | Low power FIR filter realization with differential coefficients and input. , 0, , . | | 2 |
| 89 | Data reuse analysis of local stereo matching. , 2008, , . | | 2 |
| 90 | Fast stereo matching with predictive search range. , 2010, , . | | 2 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 91 | Sub $\mu$W Noise Reduction for CIC Hearing Aids. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2012, 20, 937-947. | 3.1 | 2 |
| 92 | A 135 MHz 542 k Gates High Throughput H.264/AVC Scalable High Profile Decoder. IEEE Transactions on Circuits and Systems for Video Technology, 2012, 22, 626-635. | 8.3 | 2 |
| 93 | A 385 MHz 13.54 K Gates Delay Balanced Two-Level CAVLC Decoder for Ultra HD H.264/AVC Video. IEEE Transactions on Circuits and Systems for Video Technology, 2012, 22, 1604-1610. | 8.3 | 2 |
| 94 | Thermal-aware memory management unit of 3D-stacked DRAM for 3D high definition (HD) video. , 2014, , . | | 2 |
| 95 | Fast rate distortion optimization with adaptive context group modeling for HEVC. , 2017, , . | | 2 |
| 96 | A Real-Time 1280 Ã— 720 Object Detection Chip With 585 MB/s Memory Traffic. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2022, 30, 816-825. | 3.1 | 2 |
| 97 | Hardware-Robust In-RRAM-Computing for Object Detection. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2022, 12, 547-556. | 3.6 | 2 |
| 98 | Embedded memory module design for video signal processing. , 0, , . | | 1 |
| 99 | A compact IDCT processor for HDTV applications. , 0, , . | | 1 |
| 100 | Platform-dependent database and performance estimation for video application in embedded system. , 0, , . | | 1 |
| 101 | An MPEG-4 shape-adaptive inverse DCT with zero skipping and auto-aligned transpose memory. , 0, , . | | 1 |
| 102 | A low power and memory efficient distributed arithmetic design and its DCT application. , 0, , . | | 1 |
| 103 | Combined Frame Memory Architecture for Motion Compensation in Video Decoding. , 0, , . | | 1 |
| 104 | Block-based belief propagation with in-place message updating for stereo vision. , 2008, , . | | 1 |
| 105 | Memory analysis for H.264/AVC scalable extension encoder. , 2009, , . | | 1 |
| 106 | Fast algorithm for local stereo matching in disparity estimation. , 2011, , . | | 1 |
| 107 | An efficient mode pre-selection algorithm for H.264/AVC scalable video extension fractional motion estimation. , 2011, , . | | 1 |
| 108 | A low complexity speech coder for binaural communication in hearing aids. , 2012, , . | | 1 |

| # | Article | IF | Citations |
|---|---------|----|-----------| 
| 109 | A low-power body-channel communication system for binaural hearing aids. , 2012, , . | | 1 |
| 110 | An Efficient Mode Preselection Algorithm for Fractional Motion Estimation in H.264/AVC Scalable Video Extension. IEEE Transactions on Circuits and Systems for Video Technology, 2013, 23, 1837-1848. | 8.3 | 1 |
| 111 | A real time 1080P 30FPS Gaussian Mixture Modeling design for background subtraction and object extraction. , 2014, , . | | 1 |
| 112 | Zebra: Memory Bandwidth Reduction for CNN Accelerators with Zero Block Regularization of Activation Maps. , 2020, , . | | 1 |
| 113 | Pre-RTL DNN Hardware Evaluator With Fused Layer Support. , 2021, , . | | 1 |
| 114 | An 1-bit by 1-bit High Parallelism In-RRAM Macro with Co-Training Mechanism for DCNN Applications. , 2022, , . | | 1 |
| 115 | A Multiplierless Reconfigurable Resizer For Multi-window Image Display. , 1997, , . | | 0 |
| 116 | A multiplierless reconfigurable resizer for multi-window image display. IEEE Transactions on Consumer Electronics, 1997, 43, 826-832. | 3.6 | 0 |
| 117 | Architecture design of MPEG-4 texture decoder supporting object-based video coding. , 0, , . | | 0 |
| 118 | A bandwidth efficient subsampling-based block matching architecture for motion estimation. , 0, , . | | 0 |
| 119 | A Display Order Oriented Scalable Video Decoder. , 2006, , . | | 0 |
| 120 | ISID : In-order scan and indexed diffusion segmentation algorithm for stereo vision. , 2008, , . | | 0 |
| 121 | A memory efficient Fine Grain Scalability coefficient encoding method for H.264/AVC Scalable Video Extension. , 2009, , . | | 0 |
| 122 | Low-memory cost belief propagation architecture for disparity estimation. , 2009, , . | | 0 |
| 123 | Bandwidth-rate-distortion optimized motion estimation. , 2009, , . | | 0 |
| 124 | Efficient inter-layer prediction hardware design with extended spatial scalability for H.264/AVC scalable extension. , 2010, , . | | 0 |
| 125 | Bandwidth-constrained motion estimation for real-time mobile video application. , 2011, , . | | 0 |
| 126 | A high throughput CAVLC design for HEVC. , 2012, , . | | 0 |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 127 | Fast disparity estimation for 3DTV applications. , 2012, , . | | 0 |
| 128 | Correction to â€œLow Complexity Formant Estimation Adaptive Feedback Cancellation for Hearing Aids Using Pitch Based Processingâ€•[Aug 14 1248-1259]. IEEE/ACM Transactions on Audio Speech and Language Processing, 2014, 22, 2256-2256. | 5.8 | 0 |
| 129 | A multi-bin constant throughput CABAC decoder for HEVC. , 2015, , . | | 0 |
| 130 | Perceptual oriented depth cue enhancement for stereoscopic view synthesis. , 2016, , . | | 0 |
| 131 | Run Time Adaptive Network Slimming for Mobile Environments. , 2019, , . | | 0 |
| 132 | Image Synthesis With Efficient Defocus Blur for Stereoscopic Displays. IEEE Access, 2020, 8, 176304-176312. | 4.2 | 0 |
| 133 | Real Time On Sensor Gait Phase Detection with 0.5KB Deep Learning Model. , 2020, , . | | 0 |
| 134 | Low-Complexity Stereo Matching and Viewpoint Interpolation in Embedded Consumer Applications. , 0, , 307-330. | | 0 |