

Ivan V. Bajić

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Education:

2003	Rensselaer Polytechnic Institute, Troy, NY, USA	Ph.D. in Electrical Engineering
2002	Rensselaer Polytechnic Institute, Troy, NY, USA	M.S. in Mathematics
2000	Rensselaer Polytechnic Institute, Troy, NY, USA	M.S. in Electrical Engineering
1998	University of Natal, Durban, South Africa	B.Sc.Eng. in Electronic Eng. (<i>summa cum laude</i>)

Work experience:

- **Professor** (2017 – present), Associate Professor (2011 – 2017), Assistant Professor (2005 – 2011)
School of Engineering Science, Simon Fraser University, Burnaby, BC, Canada
Teaching: ENSC 895 – Special Topics: Deep Learning Systems (Fall 2017)
ENSC 861 – Source Coding for Digital Communications (Fall 2015)
ENSC 808 – Information Theory (Summer 2007, Spring 2008, 2010, 2012)
ENSC 802 – Stochastic Systems (Fall 2010, 2011, 2012, 2016)
ENSC 428 – Digital Communications (Spring 2009, Summer 2014)
ENSC 424 – Multimedia Communications Engineering (Fall 2006-2011)
ENSC 380 – Linear Systems (Spring 2006, 2007, 2015)
ENSC 180 – Introduction to Engineering Analysis Tools (Spring 2015)
- **Consultant** (2008 – present) to Canadian and US industry on multimedia signal processing, coding, and streaming
- **Visiting Assistant Professor** (2003 – 2005)
Electrical and Computer Engineering Department, University of Miami, Coral Gables, FL, USA
Teaching: EEN 538 – Introduction to Digital Image Processing (Fall 2004)
EEN 436 – Introduction to Digital Signal Processing (Fall 2003)
EEN 404 – Communication Systems (Spring 2004, 2005)

Research interests:

- Multimedia signal processing, coding, ergonomics, analysis, and communications
- Computer vision, machine learning, deep learning, data analytics

Selected honors:

Research

- **Front Cover** of the July/August issue of IEEE/ACM Trans. Audio, Speech, Language Process. (2016) [International]
- **Best Paper Runner-up**, IEEE International Conference on Multimedia & Expo - ICME (2012) [International]
- **SFU Endowed Research Fellow**, Simon Fraser University (2005-2006) [Institutional]
- **IBM Research Student Travel Grant**, IEEE International Conf. on Image Processing - ICIP (2003) [International]
- **South African National Research Foundation Scholar** (1999-2003) [National]

Leadership

- **Chapter of the Year Award**, IEEE Signal Processing Society Award to Vancouver Chapter (2017) [International]
- **Best Small Chapter Award**, IEEE Vancouver Section Award for Leadership in the role of IEEE Signal Processing Society Vancouver Chapter Chair (2015) [Regional]

Service

- **Best Reviewer Award**, IEEE International Conference on Multimedia & Expo - ICME (2014) [International]
- **Best Reviewer Award**, IEEE Visual Communications and Image Processing - VCIP (2013) [International]
- **Best Reviewer Award**, IEEE Visual Communications and Image Processing - VCIP (2012) [International]
- **Quality Reviewer Award**, IEEE International Conference on Multimedia & Expo - ICME (2011) [International]

Teaching

- **Outstanding Teaching Assistant Award**, ECSE Department, Rensselaer Polytechnic Institute (2000) [Departmental]

Academic

- **Altech Award** for the best final year student in Electronic Engineering, University of Natal (1998) [Departmental]
- **Skye Award** for the best final year thesis in Electronic Engineering, University of Natal (1998) [Departmental]

Professional activities and service:

- Registered Professional Engineer in the Province of British Columbia (2007 – present)
- Senior Member of IEEE
- Chair of the IEEE Signal Processing Society Vancouver Chapter (2013-present)
- Chair of the Media Streaming Interest Group (MSIG), Multimedia Communications Technical Committee, IEEE Communications Society (2010 – 2012)
- Associate Editor of the *IEEE Signal Processing Magazine* (2015 – present)
- Associate Editor of the *IEEE Transactions on Multimedia* (2016 – present)
- Lead Guest Editor for the *IEEE Communications Magazine*, special issue on "Interactive 3D Video Streaming" (2013)
- IEEE Technical Committees
 - Multimedia Systems and Applications (CAS) – Member
 - Multimedia Communications (ComSoc) – Member
 - Multimedia Computing (Computer) – Member
 - Multimedia Signal Processing (SP) – Member
 - Image, Video, and Multidimensional Signal Processing (SP) – Affiliate Member
- Publicity Co-Chair for IEEE ISM 2018, Taiwan
- TPC Co-Chair for IEEE MMSP 2018, Vancouver, BC
- Area Chair for IEEE ICME 2018, San Diego, CA
- Student Program Chair for IEEE GlobalSIP 2017, Montreal, QC
- Publicity Co-Chair for IEEE ISM 2017, Taiwan
- Student Program Co-Chair for IEEE ICME 2016, Seattle, WA
- Publicity Co-Chair for IEEE MMSP 2015, Xiamen, China
- Special Sessions Co-Chair for IEEE ICME 2015, Torino, Italy
- General Co-Chair of the IEEE Signal Processing Society Summer School on "Signal Processing and Machine Learning for Big Data," Vancouver, BC, July-August 2014
- Track Co-Chair for the Multimedia Communications and Networking track of IEEE ICME 2012, Melbourne, Australia, July 2012
- General Co-Chair of the IEEE Workshop on Streaming and Media Communications (StreamComm 2011), in conjunction with IEEE ICME 2011, Barcelona, Spain, July 2011
- TPC Member for a number of conferences in the field (since 2004), including IEEE ICIP, ICASSP, ICME, Globecom, ICC, ACM Multimedia
- Session Chair: IEEE MSE 2004; DMS 2005; MMSP 2006; Globecom 2007; ICASSP 2008; ICME 2010, 2013; StreamComm 2011; PacRim 2011, 2013; Globecom QoEMC 2012, VCIP 2017, ICASSP 2018
- Reviewer for:
 - Various funding agencies: Natural Sciences and Engineering Research Council (NSERC), Mathematics of Information Technology and Complex Systems (MITACS), Qatar National Research Fund (QNRF), Portuguese Foundation for Science and Technology (FCT), etc.
 - Journals: IEEE Trans. Image Processing, IEEE Trans. Signal Processing, IEEE Trans. Circuits Syst. Video Technol., and 20+ others
 - Conferences: (where not TPC member): ICIP, ICASSP, ICC, Globecom, ICME, VCIP, etc.

New media art:

- Telepresence consultant for **Imprint II**, a site-specific dance and music performance commissioned for the opening of the SFU Woodward's building, Vancouver, June 2010. ("*... an attention-grabbing three ring circus combining dance, projections, spoken word, and music... a sampler of what we can expect from both the new space and the new technologies it can so effortlessly showcase.*" - Vancouver Sun, June 2010.)
- Telepresence consultant for **Imprint**, a site-specific dance and music performance commissioned for the reopening of the Museum of Anthropology (MoA) in Vancouver in January 2010. Part of the Vancouver 2010 Cultural Olympiad.
- Telepresence consultant for **T2: echo**, a telematic dance performance at the Interactive Futures 2009 conference at the Emily Carr University of Art + Design (ECUAD) in Vancouver in November 2009. The performance involved a live two-way video link between the Gallery and the MoCap studio in the ECUAD main building on Granville Island, plus a live one-way multichannel audio link for violin. ("*I have never seen a live dance performance like this before... a beautiful and creative bridging of technology and human performance*" - J. DeVeaux, Nov. 2009.)

- Telepresence Architect for **T2**, a telematic dance performance premiered in Vancouver in July 2009. The performance involved live video links from the Interurban Gallery in Vancouver Downtown Eastside (common residential Internet connection) and a moving car in downtown Vancouver (mobile Internet connection through a 3G network), to the Scotiabank Dance Centre in Yaletown. (“*Technological beauty*” - Plank Magazine, July 2009.)

Research grants (excluding overhead):

1. *Demand and time-of-use optimization for load control with application to residential nanogrids* (I. V. Bajić, PI; Industrial partner: Rainforest Automation), NSERC Engage Grant EGP 517671–17, 2017 [\$25,000]
2. *Machine learning for visual analytics in HEVC bitstreams* (I. V. Bajić, PI; Industrial partner: Broadcom Canada), NSERC Engage Grant EGP 507363–16, 2017 [\$25,000]
3. *Energy and water disaggregation for non-intrusive load monitoring in buildings* (A. Majumdar and I. V. Bajić, PIs; S. S. Ram, Co-PI), IC-IMPACTS & DST initiative on Smart and Green Buildings for Sustainable Cities, 2017-2018. [\$132,000 CAD]
4. *Spatial sound field control with smart sensors and actuators*, (R. G. Vaughan, PI; B. L. Gray, Co-PI; I. V. Bajić, Co-PI), NSERC Strategic Project Grant, 2016-2018. [\$467,000 CAD]
5. *Multimedia ergonomics in the world of Big Data*, (I. V. Bajić, PI), NSERC Discovery Grant RGPIN 2016-04590, 2016-2020. [\$205,000 CAD]
6. *3D wideband acoustic noise cancellation for large volumes* (I. V. Bajić, PI; Industrial partner: Alphatron Technology), NSERC Engage Grant EGP 487083-15, 2015-2016. [\$25,000 CAD]
7. *Nonintrusive load monitoring for diagnostics of residential energy use* (I. V. Bajić, PI; Industrial partner: BC Hydro), NSERC Engage Grant EGP 486210-15, 2015-2016. [\$25,000 CAD]
8. *GPU for Big Data research* (I. V. Bajić, PI), NVIDIA Academic Hardware Grant, 2015. [\$1,300 CAD]
9. *Wireless inertial sensing-based full-body human kinematic measurement system* (E. J. Park, PI; S. N. Robinovitch, S. A. Arzanpour, C. J. Sparrey, C. Menon, I. V. Bajić, D. C. Lee, G. P. Mori, Co-PIs), NSERC Research Tools & Instruments Grant, 2015. [\$99,056 CAD]
10. *Coding and stream processing for multiparty audiovisual interaction*, (I. V. Bajić, PI; Industrial partner: Max Q Live, Inc.), NSERC Engage Grant EGP 461641, 2014 [\$25,000 CAD]
11. *Media quality testbed for the Multimedia Communications Laboratory at SFU* (I. V. Bajić, PI; J. Liang, Co-PI), NSERC Research Tools & Instruments Grant, 2013. [\$141,717 CAD]
12. *Visual saliency estimation in compressed video for quality monitoring* (I. V. Bajić, PI; Industrial partner: Cisco Systems), Cisco Research Award/Gift, 2013-2014 [\$23,200 CAD]
13. *Active volumetric sound cancellation*, (I. V. Bajić, PI; Industrial partner: Smart Screen Technologies), NSERC Engage Grant EGP 445356, 2013 [\$25,000 CAD]
14. *Wireless inertial sensor network for ubiquitous motion capture*, (E. Park, PI; D. Lee, Co-PI; I. V. Bajić, Co-PI), NSERC Strategic Project Grant STPGP 430592, 2012-2015. [\$445,000 CAD]
15. *Subjective study of visual dynamic range limits using high dynamic range video materials*, (I. V. Bajić, PI; Industrial partner: Dolby Canada), MITACS Accelerate BC Internship Grant, 2011. [\$15,000 CAD]
16. *Ergonomic multimedia* (I. V. Bajić, PI), NSERC Discovery Grant RGPIN 327249, 2011-2015. [\$160,000 CAD]
17. *Energy-efficient high dynamic range display*, (I. V. Bajić, PI; Industrial partner: Dolby Canada), MITACS Accelerate BC Internship Grant, 2011. [\$15,000 CAD]
18. *Design of an optical character recognition algorithm for information retrieval from video* (I. V. Bajić, PI; Industrial partner: BroadbandTV Corp.), NSERC Engage Grant, 2011. [\$21,500 CAD]
19. *Efficient object segmentation and video compression for eye tracking applications* (I. V. Bajić, PI; Industrial partner: Locarna Systems), MITACS Accelerate BC Internship Grant, 2010. [\$15,000 CAD]
20. *Computer screen video coding* (I. V. Bajić, PI; Industrial partner: Icron Technologies), MITACS Accelerate BC Internship Grant, 2008-2009. [\$15,000 CAD]
21. *Video coding with advanced error resilience features* (I. V. Bajić, PI), NSERC Strategic Project Grant STPSC 356715, 2008-2010. [\$141,853 CAD]
22. *Video coding and processing for improved telepresence experience in the performing arts* (I. V. Bajić, PI; H. Daniel, PI; J. Liang, Co-PI; P. Borwein, Co-PI), NSERC-CCA New Media Initiative Grant STPGP 350740, 2007-2010. [\$344,631 CAD NSERC + \$180,000 CAD CCA = \$524,631 CAD total]
23. *Temporal aspects of multimedia communications* (I. V. Bajić, PI), NSERC Discovery Grant RGPIN 327249, 2006-2010. [\$105,000 CAD]
24. *Establishment of the Multimedia Communications Laboratory at Simon Fraser University* (J. Liang, PI; I. V. Bajić, Co-PI; B. Ben Youssef, Co-PI), NSERC Research Tools & Instruments Grant EQPEQ 330976, 2006. [\$112,230 CAD]
25. SFU Endowed Research Fellowship (I. V. Bajić, PI), 2005-2006. [\$5,000 CAD]

26. SFU President's Research Grant (I. V. Bajić, PI), 2005-2007. [\$10,000 CAD]
27. SFU ENSC Startup Grant (I. V. Bajić, PI), 2005-2007. [\$40,000 CAD]

Teaching, curriculum development, and administrative grants:

1. *Attracting high-quality Ph.D. students to the School of Engineering Science* (I. V. Bajić, PI), SFU SCORE Grant, 2016-2017. [\$5,000 CAD]
2. *ENSC 180 - MATLAB for Engineering* (I. V. Bajić, PI), MathWorks Academic Support Grant, 2013-2014. [\$40,000 USD]
3. *Development of a New Course: ENSC 180*, (I. V. Bajić, PI), SFU Teaching and Learning Development Grant, 2013-2014. [\$5,000 CAD]

Research group at SFU:

Current group members

1. Dr. Md. Zulfiqar Ali Bhotto (Post-Doctoral Fellow)
2. Hyomin Choi (Ph.D. Student)
3. Saeed Ranjbar Alvar (Ph.D. Student)
4. Elham Eideh (Ph.D. Student)
5. Herath Gedara Chinthaka Pathum Dinesh (Ph.D. Student)
6. Alon Harell (M.A.Sc. student)
7. Lior Bragilevsky (Accelerated M.A.Sc. student, NSERC USRA Intern)
8. Arlene Fu (Accelerated M.A.Sc. student, VPR USRA Intern)
9. Harshavardhan Unnibhavi (MITACS Globalink Intern, Summer 2018)

Former group members

1. Dr. Stephen Makonin (PostDoc 2015-2018), Sr. Software Engineer at Knowledge Network and Adjunct Prof. at SFU
2. James Lin (M.A.Sc. 2017), Co-Founder of KnowIdea
3. Dr. Hanieh Khalilian (Ph.D. 2016), R&D Analyst at MDA
4. Mehdi Stapleton (M.A.Sc. 2016), R&D Engineer at Vancouver Computer Vision Ltd.
5. Dr. Md. Zulfiqar Ali Bhotto (PostDoc, 2014-2016), Research Scientist at A*STAR, Singapore
6. Mohammad Manjur Rashed Khan (M.Eng. 2015), Principal Software Engineer, Team Lead at Broadcom
7. Dr. Sayed Hossein Khatoonabadi (Ph.D. 2015), Software Engineer at PDFTron
8. Victor Mateescu (M.A.Sc. 2014, B.A.Sc. 2013, NSERC USRA Summer 2012 Intern), Software Engineer at MDA
9. Simranjit Sidhu (B.A.Sc.(Hons) 2014, NSERC USRA Summer 2013 Intern), Amazon
10. Dr. Hadi Hadizadeh (Ph.D. 2013), Assistant Professor, Quchan University of Advanced Technology, Iran
11. Simran Sarai (M.Eng. 2013), Broadcom
12. Woong Lim (Visiting Researcher 2012-2013), Research Engineer at ETRI, Korea
13. Dr. Yue-Meng Chen (Ph.D. 2012, M.A.Sc. 2007, NSERC CGS-D recipient), Founder and CEO of HiCling, previously Lead Algorithms Architect at Striiv and Lead Software Architect at Obihai - all Silicon Valley start-ups
14. Hyomin Choi (Visiting Researcher 2011-2012), Ph.D. student at SFU
15. Kyung-Yeon Min (Visiting Researcher 2011-2012), LG Electronics, Korea
16. Jung-Hak Nam (Visiting Researcher 2011-2012), LG Electronics, Korea
17. Xiaonan Ma (M.A.Sc. 2011), AeroInfo Systems
18. Dr. Zhengguang Xie (Visiting Researcher 2010), Assistant Professor at Nantong University, China
19. Mahin Torki (M.A.Sc. 2009), Microsoft
20. S. Mohsen Amiri (M.A.Sc. 2009), Facebook
21. Dr. Weidang Zhang (Visiting Researcher 2008-2009), Professor at Zhengzhou University, China
22. Sohail Bahmani (M.A.Sc. 2008), PostDoc at Georgia Tech
23. Lokesh Jindal (B.Tech. BITS-Pilani, MITACS Globalink Intern, Summer 2011), Performance Modeling Engineer at Oracle Microelectronics
24. Vipul Mathur (B.Tech. IIT-Bombay, MITACS Globalink Intern, Summer 2010), Avendus Capital
25. Dr. Mario J. Enriquez (PostDoc 2009-2010), now Sr. Manager of New Technologies/Human Factors, Johnson Controls, USA
26. Joan Thomas (B.A.Sc. 2009, undergraduate intern, Fall 2008), now with Atmel Corp.
27. Dr. Myo Tun (PostDoc 2008), now Sr. Video Software Engineer at EucludIQ, LLC

28. Tony Tsai (B.A.Sc. 2009, undergraduate intern, Fall 2007), Founder of Racing Bio, previously with RIM
29. Sunghoon Ivan Lee (B.A.Sc.(Hons) 2008), Assistant Professor of Computer Science, UMass – Amherst, USA.

Publications:

Journal papers:

- [1] C. Dinesh, I. V. Bajić, and G. Cheung, “Adaptive non-rigid inpainting of 3D point cloud geometry,” accepted to *IEEE Signal Processing Letters*, Apr. 2018.
- [2] H. Hadizadeh and I. V. Bajić, “Full-reference objective quality assessment of tone-mapped images,” *IEEE Trans. Multimedia*, vol. 20, no. 2, pp. 392-404, Feb. 2018.
- [3] S. H. Khatoonabadi, I. V. Bajić, and Y. Shan, “Compressed-domain visual saliency models: A comparative study,” *Multimedia Tools and Applications*, vol. 76, no. 24, pp. 26297–26328, Dec. 2017.
- [4] H. Hadizadeh, A. Rajati, and I. V. Bajić, “Saliency-guided just noticeable distortion estimation using the normalized Laplacian pyramid,” *IEEE Signal Processing Letters*, vol. 24, no. 8, pp. 1218-1222, Aug. 2017.
- [5] M. Z. A. Bhotto, S. Makonin, and I. V. Bajić, “Load disaggregation based on aided linear integer programming,” *IEEE Trans. Circuits and Systems II: Express Briefs*, vol. 64, no. 7, pp. 792-796, Jul. 2017.
- [6] C.-H. Kwak and I. V. Bajić, “Online MoCap data coding with bit allocation, rate control, and motion-adaptive post-processing,” *IEEE Trans. Multimedia*, vol. 19, no. 6, pp. 1127-1141, Jun. 2017.
- [7] H. Khalilian, I. V. Bajić, and R. G. Vaughan, “A simulation study of a 3D sound field reproduction system for immersive communication,” *IEEE/ACM Trans. Audio, Speech, Language Process.*, vol. 25, no. 5, pp. 980-995, May 2017.
- [8] H. Hadizadeh and I. V. Bajić, “Color Gaussian jet features for no-reference quality assessment of multiply-distorted images,” *IEEE Signal Processing Letters*, vol. 23, no. 12, pp. 1717-1721, Dec. 2016.
- [9] S. Makonin, F. Popowich, I. V. Bajić, B. Gill, and L. Bartram, “Exploiting HMM sparsity to perform online real-time nonintrusive load monitoring (NILM),” *IEEE Trans. Smart Grid*, vol. 7, no. 6, pp. 2575-2585, Nov. 2016.
- [10] H. Hadizadeh and I. V. Bajić, “No-reference image quality assessment using statistical wavelet packet features,” *Pattern Recognition Letters*, vol. 80, pp. 144–149, Sep. 2016.
- [11] H. Khalilian, I. V. Bajić, and R. G. Vaughan, “Comparison of loudspeaker placement methods for sound field reproduction,” *IEEE/ACM Trans. Audio, Speech, Language Process.*, vol. 24, no. 8, pp. 1364 – 1379, Aug. 2016. (**Front Cover of the July/August issue**; among **top 40** most downloaded papers from this journal Jun. 2016, Sep. 2016)
- [12] S. Makonin, B. Ellert, I. V. Bajić, and F. Popowich, “Electricity, water, and natural gas consumption of a residential house in Canada from 2012 to 2014,” *Scientific Data* (Nature Publishing Group), vol. 3, article no. 160037, Jun. 2016.
- [13] V. A. Mateescu and I. V. Bajić, “Visual attention retargeting,” *IEEE MultiMedia*, vol. 23, no. 1, pp. 82-91, Jan.-Mar. 2016. (Among **top 50** most downloaded papers from this journal, Aug. 2015, Nov. 2015, May 2016, **top 40** in July 2016, **top 25** in Jun 2016, **top 20** in Feb. 2016, Aug. 2016, Sep. 2016, **top 15** in Mar.-Apr. 2016)
- [14] S. H. Khatoonabadi, I. V. Bajić, and Y. Shan, “Compressed-domain correlates of human fixations in dynamic scenes,” *Multimedia Tools and Applications*, vol. 74, no. 22, pp. 10057-10075, Nov. 2015. (Special Issue on Perception Inspired Video Processing)
- [15] K.-Y. Min, W. Lim, J. Nam, D. Sim, and I. V. Bajić, “Distributed video coding supporting hierarchical GOP structures with transmitted motion vectors,” *EURASIP J. Image and Video Processing*, 2015:12, May 2015. (Among **top 50** most viewed papers from this journal, Jun.-Dec. 2015, Apr. 2016)
- [16] Md. Z. A. Bhotto and I. V. Bajić, “Constant modulus blind adaptive beamforming based on unscented Kalman filtering,” *IEEE Signal Processing Letters*, vol. 22, no. 4, pp. 474-478, Apr. 2015. (Among **top 50** most downloaded papers from this journal, Oct. 2014)
- [17] K. Min, J. Ma, D. Sim, and I. V. Bajić, “Bi-directional mesh-based frame rate up-conversion with a dense motion vector map,” *IEEE MultiMedia*, vol. 22, no. 2, pp. 36-45, Apr.-Jun. 2015. (Among **top 20** most downloaded papers from this journal in Jul. 2015, **top 30** in Aug. 2015, **top 35** in Jun. 2016, **top 50** in Dec. 2015)
- [18] H. Hadizadeh and I. V. Bajić, “Saliency-aware video compression,” *IEEE Trans. Image Processing*, vol. 23, no. 1, pp. 19-33, Jan. 2014. (Among **top 10** most downloaded papers from this journal in Nov. 2013, **top 20** in Dec. 2014)
- [19] H. Choi, J. Yoo, J. Nam, D. Sim, and I. V. Bajić, “Pixel-wise unified rate-quantization model for multi-level rate control,” *IEEE J. Sel. Topics Signal Process.*, vol. 7, no. 6, pp. 1112-1123, Dec. 2013. (Special Issue on Video Coding: HEVC and Beyond) (Among **top 25** most downloaded papers from this journal, Dec. 2013 - Jan. 2014)

- [20] H. Hadizadeh, I. V. Bajić, and G. Cheung, "Video error concealment using a computation-efficient low saliency prior," *IEEE Trans. Multimedia*, vol. 15, no. 8, pp. 2099-2113, Dec. 2013.
- [21] H. Khalilian and I. V. Bajić, "Video watermarking with empirical PCA-based decoding," *IEEE Trans. Image Processing*, vol. 22, no. 12, pp. 4825-4840, Dec. 2013.
- [22] P. Wan, Y. Feng, G. Cheung, I. V. Bajić, and O. C. Au, "3D motion estimation for visual saliency modeling," *IEEE Signal Processing Letters*, vol. 20, no. 10, pp. 972-975, Oct. 2013. (Among **top 10** most downloaded papers from this journal, August 2013)
- [23] S. H. Khatoonabadi and I. V. Bajić, "Video object tracking in the compressed domain using spatio-temporal Markov random fields," *IEEE Trans. Image Processing*, vol. 22, no. 1, pp. 300-313, Jan. 2013. (Among **top 10** most downloaded papers from this journal, January 2013)
- [24] H. Hadizadeh, M. J. Enriquez, and I. V. Bajić, "Eye-tracking database for a set of standard video sequences," *IEEE Trans. Image Processing*, vol. 21, no. 2, pp. 898-903, Feb. 2012.
- [25] H. Hadizadeh and I. V. Bajić, "Burst-loss-resilient packetization of video," *IEEE Trans. Image Processing*, vol. 20, no. 11, pp. 3195-3206, Nov. 2011.
- [26] Y.-M. Chen and I. V. Bajić, "A joint approach to global motion estimation and motion segmentation from a coarsely sampled motion vector field," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 21, no. 9, pp. 1316-1328, Sep. 2011. (Among **top 10** most downloaded papers from this journal, September 2011)
- [27] H. Hadizadeh and I. V. Bajić, "Rate-distortion optimized pixel-based motion vector concatenation for reference picture selection," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 21, no. 8, pp. 1139-1151, Aug. 2011. (Among **top 20** most downloaded papers from this journal, August 2011)
- [28] Y.-M. Chen, I. V. Bajić, and P. Saeedi, "Moving region segmentation from compressed video using global motion estimation and Markov random fields," *IEEE Trans. Multimedia*, vol. 13, no. 3, pp. 421-431, Jun. 2011. (Special Issue on ICME 2010) (Among **top 15** most downloaded papers from this journal in May 2011, **top 2** in June 2011, **top 10** in July 2011; featured in the *IEEE MMTC R-Letter*, vol. 3, no. 1, pp. 17-18, Feb. 2012.)
- [29] W. Zhang, X. Shao, M. Toriki, A. HajShirmohammadi, and I. V. Bajić, "Unequal error protection of JPEG2000 images using short block length turbo codes," *IEEE Commun. Letters*, vol. 15, no. 6, pp. 659-661, Jun. 2011.
- [30] I. V. Bajić and X. Ma, "A testbed and methodology for comparing live video frame rate control methods," *IEEE Signal Processing Letters*, vol. 18, no. 1, pp. 31-34, Jan. 2011.
- [31] S. Bahmani, I. V. Bajić, and A. HajShirmohammadi, "Joint decoding of unequally protected JPEG2000 bitstreams and Reed-Solomon codes," *IEEE Trans. Image Processing*, vol. 19, no. 10, pp. 2693-2704, Oct. 2010.
- [32] Y.-M. Chen and I. V. Bajić, "Region-based predictive decoding of video," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 20, no. 3, pp. 452-457, Mar. 2010.
- [33] Y.-M. Chen and I. V. Bajić, "Motion vector outlier rejection cascade for global motion estimation," *IEEE Signal Processing Letters*, vol. 17, no. 2, pp. 197-200, Feb. 2010.
- [34] Y. Shan, I. V. Bajić, J. W. Woods, and S. Kalyanaraman, "Scalable video streaming with fine grain adaptive forward error correction," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 19, no. 9, pp. 1302-1314, Sep. 2009.
- [35] I. V. Bajić and J. W. Woods, "Error concealment for scalable motion-compensated subband/wavelet video coders," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 17, no. 4, pp. 508-514, Apr. 2007.
- [36] I. V. Bajić, "Efficient cross-layer error control for wireless video multicast," *IEEE Trans. Broadcasting*, vol. 53, no. 1, part 2, pp. 276-285, Mar. 2007. (Special Issue on Mobile Multimedia Broadcasting)
- [37] I. V. Bajić, "Noncausal error control for video streaming over wireless packet networks," *IEEE Trans. Multimedia*, vol. 8, no. 6, pp. 1263-1273, Dec. 2006.
- [38] P. Luykx, I. V. Bajić, and S. Khuri, "NXSensor web tool for evaluating DNA for nucleosome exclusion sequences and accessibility to binding factors," *Nucleic Acids Research*, vol. 34, Web Server issue, pp. W560-W565, Jul. 2006.
- [39] I. V. Bajić, "Detection-theoretic analysis of MatInspector," *IEEE Trans. Signal Processing*, vol. 54, no. 6, part 2, pp. 2388-2393, Jun. 2006. (Special Issue on Genomic Signal Processing)
- [40] I. V. Bajić, "Adaptive MAP error concealment for dispersively packetized wavelet-coded images," *IEEE Trans. Image Processing*, vol. 15, no. 5, pp. 1226-1235, May 2006.
- [41] Y. Shan, I. V. Bajić, S. Kalyanaraman, and J. W. Woods, "Overlay multi-hop FEC scheme for video streaming," *Signal Processing: Image Commun.*, vol. 20, no. 8, pp. 710-727, Sep. 2005. (Special Issue on Video Networking) (Among **top 25** most downloaded papers from this journal, July - September 2005)
- [42] I. V. Bajić and J. W. Woods, "Domain-based multiple description coding of images and video," *IEEE Trans. Image Processing*, vol. 12, no. 10, pp. 1211-1225, Oct. 2003.
- [43] I. V. Bajić and J. W. Woods, "Maximum minimal distance partitioning of the Z^2 lattice," *IEEE Trans. Inform. Theory*, vol. 49, no. 4, pp. 981-992, Apr. 2003.

Conference papers:

- [1] H. Choi and I. V. Bajić, “Deep feature compression for collaborative object detection,” to be presented at *IEEE ICIP’18*, Athens, Greece, Oct. 2018.
- [2] S. R. Alvar, H. Choi, and I. V. Bajić, “Can you find a face in a HEVC bitstream?” *Proc. IEEE ICASSP’18*, pp. 1288-1292, Calgary, AB, Apr. 2018.
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