Ivan V. Bajić

School of Engineering Science
Simon Fraser University
8888 University Drive
Burnaby, BC, V5A 1S6, Canada

Tel: 1-778-782-7159
Fax: 1-778-782-4951
e-mail: ibajic@ensc.sfu.ca
web: www.sfu.ca/~ibajic

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. (*summa cum laude*)

Work experience:

- **Associate Professor** (2011-present), Assistant Professor (2005-2011)
  School of Engineering Science, Simon Fraser University, Burnaby, BC, Canada
  Research: Image and video processing, coding, and transmission
  Teaching: ENSC 808 – Information Theory (Summer 2007, Spring 2008, 2010, 2012)
  ENSC 802 – Stochastic Systems (Fall 2010, 2011)
  ENSC 428 – Digital Communications (Spring 2009)
  ENSC 424 – Multimedia Communications Engineering (Fall 2006-2011)
  ENSC 380 – Linear Systems (Spring 2006-2007)

- **Visiting Assistant Professor** (2003-2005)
  Electrical and Computer Engineering Department, University of Miami, Coral Gables, FL, USA
  Research: Image and video processing, coding, and transmission; computational biology
  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:

- Image and video processing and coding
- Multimedia communications and networking

Selected honors:

- ***Quality Reviewer***, IEEE International Conference on Multimedia & Expo - ICME (2011) [International]
- ***SFU Endowed Research Fellow***, Simon Fraser University (2005-2006) [Institutional]
- ***IBM Research Student Travel Grant*** for *IEEE International Conf. on Image Processing* (2003) [International]
- ***Outstanding Teaching Assistant*** Award, ECSE Department, Rensselaer Polytechnic Institute (2000) [Departmental]
- ***South African National Research Foundation Scholar*** (1999-2003) [National]
- ***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, for the thesis *Digital signal processing techniques in the analysis of DNA/RNA and protein sequences* (1998) [Departmental]

Professional activities and service:

- Registered Professional Engineer in the Province of British Columbia (2007 – present).
- Senior Member of IEEE (Signal Processing, Information Theory, Communications, and CAS Societies).
- Associate Editor for the International Journal of Digital Multimedia Broadcasting (2008 – present).
- Guest Editor for the Journal of Communications, special issue on Multimedia Communications, Networking and Applications (2009)
- Chair of the Media Streaming Interest Group, Multimedia Communications Technical Committee, IEEE Communications Society (2010 – present).

- General Co-Chair of the IEEE Workshop on Streaming and Media Communications (StreamComm 2011), in conjunction with IEEE ICME 2011, Barcelona, Spain, July 2011.
- Track Co-Chair for the Multimedia Communications and Networking track of IEEE ICME 2012, Melbourne, Australia, July 2012.
- TPC Member: IEEE ICIP 2004, 2005, 2006; WMSN 2006; ISSPIT 2006; ICC 2007 (MCH), 2009 (AHSN), 2010 (AHS), 2011 (AHSM, WNS), 2012 (WN); CWIT 2007; ICCCN 2007 (SPC); Globecom 2007 (MCSS), 2010 (AHSN, ST); PCM 2007, 2009, 2010; CCNC 2008, 2009, 2010; CCECE 2009; ICME 2011
- Session Chair: IEEE MSE 2004; DMS 2005, MMSP 2006, Globecom 2007, ICASSP 2008, ICME 2010, StreamComm 2011, PacRim 2011.
- Reviewer for the Natural Sciences and Engineering Research Council (NSERC) grant proposals (2009 - present)
- Reviewer for the Mathematics of Information Technology and Complex Systems (MITACS) grant proposals (2010)
- Journal reviewer: IEEE Trans. Image Processing, IEEE Trans. Signal Processing, IEEE Trans. Multimedia, IEEE Trans. Circuits Syst. Video Technol., IEEE Signal Processing Letters, IEEE J. Select. Topics Signal Processing, IEEE J. Select. Areas Commun., IEEE Trans. Wireless Commun., IEEE Commun. Magazine, IEEE Commun. Letters, IEEE Multimedia, IEEE Trans. Broadcasting, IEEE Trans. Mobile Computing, IEEE Trans. Biomedical Engineering, IEEE Systems Journal, IET Image Processing, IET Electronics Letters, EURASIP J. Appl. Signal Processing, J. Vis. Commun. Image Represent., ACM Computer Commun. Review, Computer Networks, J. Bioinformatics and Computational Biology, Medical Engineering & Physics.
- Conference reviewer (where not TPC member): IEEE ICC 2004, 2008; Globecom 2004; Gensips 2005; ISCAS 2006, 2007, 2008; ICIP 2007, 2008, 2009, 2010, 2011; ICASSP 2008, 2009, 2010, 2011, 2012; EUSIPCO 2009, 2010.

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. *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]
2. *Ergonomic multimedia* (I. V. Bajić, PI), NSERC Individual Discovery Grant RGPIN 327249, 2011-2015. [$160,000 CAD]
3. *Energy-efficient high dynamic range display*, (I. V. Bajić, PI; Industrial partner: Dolby Canada), MITACS Accelerate BC Internship Grant, 2011. [$15,000 CAD]
4. *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]
5. *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]
6. *Computer screen video coding* (I. V. Bajić, PI; Industrial partner: Icron Technologies), MITACS Accelerate BC Internship Grant, 2008-2009. [$15,000 CAD]
7. *Video coding with advanced error resilience features* (I. V. Bajić, PI), NSERC Strategic Project Grant STPSC 356715, 2008-2010. [$141,853 CAD]

8. *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]
9. *Temporal aspects of multimedia communications* (I. V. Bajić, PI), NSERC Individual Discovery Grant RGPIN 327249, 2006-2010. [$105,000 CAD]
10. *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]
11. SFU Endowed Research Fellowship (I. V. Bajić, PI), 2005-2006. [$5,000 CAD]
12. SFU President's Research Grant (I. V. Bajić, PI), 2005-2007. [$10,000 CAD]
13. SFU ENSC Startup Grant (I. V. Bajić, PI), 2005-2007. [$40,000 CAD]

Student advising at SFU:

Current graduate students

1. Yue-Meng Chen (Ph.D. student)
2. Hadi Hadizadeh (Ph.D. student)
3. Hanieh Khalilian (Ph.D. student)
4. Sayed Hossein Khatoonabadi (Ph.D. student)
5. Choong-Hoon Kwak (Ph.D. student)
6. Carl Qian (Ph.D. student)

Alumni: Graduate

1. Xiaonan Ma (M.A.Sc. 2011, now with Mingleverse)
2. Mahin Torki (M.A.Sc. 2009, now with Simba Technologies), co-supervised with Dr. A. HajShirmohammadi
3. S. Mohsen Amiri (M.A.Sc. 2009, now a Ph.D. student at UBC)
4. Sohail Bahmani (M.A.Sc. 2008, now a Ph.D. student at CMU), co-supervised with Dr. A. HajShirmohammadi
5. Yue-Meng Chen (M.A.Sc. 2007, now a Ph.D. student at SFU)

Alumni: Undergraduate

6. Lokesh Jindal (B.Tech. student at BITS-Pilani, MITACS Globalink Intern, Summer 2011)
7. Vipul Mathur (B.Tech. student at IIT-Bombay, MITACS Globalink Intern, Summer 2010)
8. Simranjit Sidhu (B.A.Sc. student at SFU, undergraduate co-op intern, Summer 2010)
9. Joan Thomas (B.A.Sc. 2010, undergraduate intern,. Fall 2008)
10. Tony Tsai (B.A.Sc. 2009, undergraduate intern, Fall 2007)
11. Sunghoon Ivan Lee (B.A.Sc. 2008, now a Ph.D. student at UCLA)

Alumni: Postdoctoral

12. Mario J. Enriquez (2009-2010, now with Johnson Controls, USA)

Publications:

Journal papers:

[1] H. Hadizadeh, M. Enriquez, and I. V. Bajić, "Eye-tracking database for a set of standard video sequences," accepted for publication in *IEEE Trans. Image Processing,* Aug. 2011.

[2] 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.

[3] 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 25** most download papers from this journal, September 2011)

[4] 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 25** most download papers from this journal, August 2011)

[5] 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 25** most download papers from this journal, May-July 2011)

[6] W. Zhang, X. Shao, M. Torki, 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.
[7] 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.
[8] 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.
[9] 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.
[10] 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.
[11] 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.
[12] 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.
[13] 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)
[14] 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.
[15] 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.
[16] 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)
[17] 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.
[18] 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)
[19] 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.
[20] 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. Hadizadeh, I. V. Bajić, P. Saeedi, and S. Daly, "Good-looking green images," *Proc. IEEE ICIP'11*, pp. 3238-3241, Brussels, Belgium, Sep. 2011.
[2] Y.-M. Chen and I. V. Bajić, "Spatio-temporal super-resolution from compressed video employing global and local motion," *Proc. IEEE PacRim'11*, pp. 907-912, Victoria, BC, Aug. 2011.
[3] H. Choi, J. Nam, D. Sim, and I. V. Bajić, "Scalable video coding based on high efficiency video coding (HEVC)," *Proc. IEEE PacRim'11*, pp. 346-351, Victoria, BC, Aug. 2011.
[4] H. Hkalilian and I. V. Bajić, "Multiplicative video watermarking with semi-blind maximum likelihood decoding for copyright protection," *Proc. IEEE PacRim'11*, pp. 125-130, Victoria, BC, Aug. 2011.
[5] J. Nam, W. Lim, D. Sim, and I. V. Bajić, "Multi-view video coding based on high efficiency video coding (HEVC)," presented at *ITC-CSCC 2011*, Gyeongju, Korea, Jun. 2011.
[6] Y.-M. Chen and I. V. Bajić, "Predictive video decoding using GME and motion reliability," *Proc. SPIE Applications of Digital Image Processing XXXIV*, vol. 8135, San Diego, CA, Aug. 2011. (Invited)
[7] H. Hadizadeh and I. V. Bajić, "Saliency-preserving video compression," Proc. *IEEE ICME'11 (AVCC)*, Barcelona, Spain, Jul. 2011.
[8] C.-H. Kwak and I. V. Bajić, "Error concealment strategies for motion capture data streaming," *Proc. IEEE ICME'11 (StreamComm)*, Barcelona, Spain, Jul. 2011.
[9] C.-H. Kwak and I. V. Bajić, "Hybrid low-delay compression of motion capture data," *Proc. IEEE ICME'11*, Barcelona, Spain, Jul. 2011.
[10] Y.-M. Chen, I. V. Bajić, and P. Saeedi, "Motion segmentation in compressed video using Markov random fields," *Proc. IEEE ICME'10*, pp. 760-765, Singapore, July 2010. (Among **top 15%** of papers)
[11] H. Hadizadeh and I. V. Bajić, "Pixel-based motion vector concatenation for reference picture selection," *Proc. IEEE ICME'10*, pp. 209-213, Singapore, July 2010.

[12] I. V. Bajić and X. Ma, "MCL.JIT library for scalable live video in Max/MSP/Jitter," *Proc. IEEE CCECE 2010*, Calgary, AB, May 2010.
[13] Y.-M. Chen and I. V. Bajić, "Predictive video decoding based on ordinal depth of moving regions," *Proc. IEEE ICC'10*, Cape Town, South Africa, May 2010.
[14] H. Hadizadeh and I. V. Bajić, "Burst loss resilient packetization of video," *Proc. IEEE ICC'10*, Cape Town, South Africa, May 2010.
[15] Y.-M. Chen and I. V. Bajić, "Compressed-domain moving region segmentation with pixel precision using motion integration," *Proc. IEEE PacRim'09*, pp. 442-447, Victoria, BC, Aug. 2009.
[16] Y.-M. Chen, I. V. Bajić, and C. Qian, "Frame rate up-conversion of compressed video using region segmentation and depth ordering," *Proc. IEEE PacRim'09*, pp. 431-436, Victoria, BC, Aug. 2009.
[17] S. M. Amiri and I. V. Bajić, "Subset selection in Type-II hybrid ARQ/FEC for video multicast," *Proc. IEEE ICC'09*, Dresden, Germany, Jun. 2009.
[18] S. Bahmani, I. V. Bajić, and A. HajShirmohammadi, "Improved joint source-channel decoding of JPEG2000 images and Reed-Solomon codes," *Proc. IEEE ICC'09*, Dresden, Germany, Jun. 2009.
[19] Y.-M. Chen, I. V. Bajić, and P. Saeedi, "Coarse-to-fine moving region segmentation in compressed video," *Proc. IEEE WIAMIS'09*, pp. 45-48, London, UK, May 2009.
[20] S. M. Amiri and I. V. Bajić, "A novel noncausal whole-frame concealment algorithm for video streaming," *Proc. IEEE ISM'08*, pp. 154-159, Berkeley, CA, Dec. 2008.
[21] S. M. Amiri and I. V. Bajić, "A two-stage H.264/AVC encoder for video streaming with fast reference picture selection," *Proc. ACM WMuNeP'08*, pp. 37-44, Vancouver, BC, Oct. 2008.
[22] S. Bahmani, I. V. Bajić, and A. HajShirmohammadi, "Joint source-channel decoding of JPEG2000 images with unequal loss protection," *Proc. IEEE ICASSP'08*, pp. 1365-1368, Las Vegas, NV, Apr. 2008.
[23] Y.-M. Chen and I. V. Bajić, "Predictive decoding for delay reduction in video communications," *Proc. IEEE Globecom'07*, pp. 2053-2057, Washington, DC, Nov. 2007.
[24] I. V. Bajić, "The effects of channel correlation on the performance of some multiple description schemes," *Proc. Canadian Workshop on Information Theory (CWIT'07)*, pp. 93-96, Edmonton, AB, Canada, Jun. 2007.
[25] I. V. Bajić, "Efficient error control for wireless video multicast," *Proc. IEEE Workshop on Multimedia Signal Processing (MMSP'06)*, pp. 306-309, Victoria, BC, Canada, Oct. 2006.
[26] I. V. Bajić, "Non-causal error control for wireless video streaming with noncoherent signaling," *Proc. IEEE ISCAS'06*, pp. 690-693, Kos Island, Greece, May 2006.
[27] Y. Shan, S. Kalyanaraman, J. W. Woods, and I. V. Bajić, "Joint source-network coding for scalable overlay video streaming," *Proc. IEEE ICIP'05*, vol. 1, pp. 177-180, Genova, Italy, Sep. 2005. (Among **top 10%** of papers)
[28] X. Yu, J. W. Modestino, and I. V. Bajić, "Performance analysis of the efficacy of packet-level FEC in improving video transport over networks," *Proc. IEEE ICIP'05*, vol. 2, pp. 177-180, Genova, Italy, Sep. 2005.
[29] X. Yu, J. W. Modestino, and I. V. Bajić, "Modeling and analysis of multipath video transport over lossy networks using packet-level FEC," *Proc. 11th Int. Conf. on Distributed Multimedia Systems (DMS'05)*, pp. 265-270, Banff, Canada, Sep. 2005.
[30] I. V. Bajić, "Non-causal error control for video streaming over wireless packet networks," *Proc. IEEE WirelessCom'05*, pp. 1106-1111, Maui, HI, Jun. 2005.
[31] I. V. Bajić, "Detection-theoretic analysis of MatInspector," *Proc. IEEE Workshop on Genomic Signal Processing and Statistics (GENSIPS'05)*, New Port, RI, May 2005.
[32] I. V. Bajić, "Adaptive MAP error concealment for dispersively packetized images," *Proc. IEEE Int. Symposium on Multimedia Software Engineering (MSE'04)*, pp. 52-59, Miami, FL, Dec. 2004.
[33] Q. Qu, I. V. Bajić, X. Tian, and J. W. Modestino, "On the effects of path correlation in multi-path video communications over packet networks," *Proc. IEEE Globecom'04*, vol. 2, pp. 977-981, Dallas, TX, Dec. 2004.
[34] Y. Shan, I. V. Bajić, S. Kalyanaraman, and J. W. Woods, "Overlay multi-hop FEC scheme for video streaming over peer-to-peer networks," *Proc. IEEE ICIP'04*, vol. 5, pp. 3133-3136, Singapore, Oct. 2004.
[35] I. V. Bajić, "Optimal subsampling of circularly bandlimited images," *Proc. IEEE ICASSP'04*, vol. 3, pp. 313-316, Montreal, Canada, May 2004.
[36] I. V. Bajić, O. Tickoo, A. Balan, S. Kalyanaraman, and J. W. Woods, "Integrated end-to-end buffer management and congestion control for scalable video communications," *Proc. IEEE ICIP'03*, vol. III, pp. 257-260, Barcelona, Spain, Sep. 2003.
[37] I. V. Bajić and J. W. Woods, "EZBC video streaming with channel coding and error concealment," *Proc. SPIE,* vol. 5150, (*Visual Commun. Image Proc. – VCIP 2003*) , pp. 512 – 522, Lugano, Switzerland, Jul. 2003.
[38] I. V. Bajić and J. W. Woods, "Concatenated multiple description coding of frame-rate scalable video," *Proc. IEEE ICIP'02,* vol. II, pp. 193-196, Rochester, NY, Sep. 2002.

[39] I. V. Bajić and J. W. Woods, "Domain-based multiple description coding of images and video," *Proc. SPIE*, vol. 4671 (*Visual Commun. Image Proc. – VCIP 2002*), pp. 124-135, Jan. 2002.
[40] I. V. Bajić, J. W. Woods, and A. M. Chaudry, "Robust transmission of packet video through dispersive packetization and error concealment," in *Proc. Packet Video Workshop (PV2000)*, Cagliari, Sardinia, Italy, May 2000.
[41] V. B. Bajić, I. V. Bajić, and W. Hide, "Recognition of complex spectral patterns of a class of human promoters by ANNs," *Proc. VI International SAUM Conference (SAUM'98)*, pp. 489-492, Nis, Yugoslavia, Sep. 1998.
[42] V. B. Bajić and I. V. Bajić, "Improved accuracy of EM flow measurements in partially filled pipes based on Radial Basis ANN," *Proc. VI International SAUM Conference (SAUM'98)*, pp. 494-498, Nis, Yugoslavia, Sep. 1998.
[43] V. B. Bajić, I. V. Bajić, and W. Hide, "Application of the Resonant Recognition Model to a set of human promoters: A word of warning," *Advances in Systems, Signals, Control and Computers (SSCC'98)*, Vol. II, pp. 312-315, Durban, South Africa, Sep. 1998.
[44] V. B. Bajić, I. V. Bajić, and W. Hide, "Spectral characterization of human promoters," *Advances in Systems, Signals, Control and Computers (SSCC'98)*, Vol. II, pp. 321-325, Durban, South Africa, Sep. 1998.
[45] I. V. Bajić and V. B. Bajić, "RB neural networks in the EM measurements of flow through partially filled pipes," *Advances in Systems, Signals, Control and Computers (SSCC'98)*, Vol. II, pp. 293-298, Durban, South Africa, Sep. 1998.
[46] V. B. Bajić and I. V. Bajić, "Some problems in application of Information Spectrum Method and Resonant Recognition Model for cross-spectral analysis of DNA/RNA sequences," *Proc. IEEE South African Symposium on Communications and Signal Processing (COMSIG '98)*, pp. 219-224, Cape Town, South Africa, Sep. 1998.
[47] V. B. Bajić, I. V. Bajić, and W. Hide, "A new method of spectral analysis of DNA/RNA and protein sequences," (plenary lecture), *Proc. First International Conference on Bioinformatics of Genome Regulation and Structure (BGRS'98)*, Vol. 1, pp. 120-123, Novosibirsk, Russia, Aug. 1998.

Conference demonstrations:

[1] H. Hadizadeh and I. V. Bajić, "NAL-SIM: An interactive simulator for H.264/AVC video coding and transmission," *Proc. IEEE CCNC'10*, Las Vegas, NV, Jan. 2010.

Short magazine/newsletter papers:

[1] I. V. Bajić and X. Ma, "Scalable video coding for telepresence in the performing arts," *IEEE ComSoc MMTC E-Letter*, vol. 4, no. 8, pp. 28-30, Sep. 2009. (Invited)

Books and book chapters:

[1] I. V. Bajić, *Robust Subband/Wavelet Coding and Transmission of Images and Video*, VDM Publishing, 2008. ISBN 978-3-639-10440-0
[2] I. V. Bajić, "Error control for broadcasting and multicasting: An overview," Chapter 11 in *Mobile Multimedia Broadcasting Standards* (F.-L. Luo, Ed.), Springer, 2008. ISBN 978-0-387-78262-1
[3] I. V. Bajić, "Robust SWT video coding," Section 12.2 in *Multidimensional Signal, Image and Video Processing and Coding* (J. W. Woods), pp. 447-457, Elsevier - Academic Press, 2006. ISBN 0-12-088516-6. Section 13.2 in the Second Edition, 2011, ISBN 978-0123814203
[4] V. B. Bajić and I. V. Bajić, "How neural networks find promoters using recognition of micro-structural promoter components," Chapter 5 in *The Practical Bioinformatician*, (L. Wong, Ed.), pp. 91-122, World Scientific, 2004. ISBN 9-812-38846-X
[5] V. B. Bajić and I. V. Bajić, "Neural network system for promoter recognition," Chapter 14 in *Future Directions for Intelligent Systems and Information Sciences: The Future of Speech and Image Technologies, Brain Computers, WWW, and Bioinformatics*, (N. Kasabov, Ed.), pp. 288-305, Physica-Verlag, 2000. ISBN 3-790-81276-5

Standardization contributions:

[1] A. Golwelkar, I. V. Bajić, and J. W. Woods, "Response to call for evidence on scalable video coding," ISO/IEC JTC1/SC29/WG11/M9723, Trondheim, Norway, Jul. 2003.

Theses:

[1] I. V. Bajić, *Robust subband/wavelet coding and transmission of images and video*, Ph.D. Thesis (Electrical Engineering), Rensselaer Polytechnic Institute, Troy, NY, Aug. 2003.

[2] I. V. Bajić, *Connecting surfaces with Gaussian curvature of one sign from convex curves in parallel planes*, M.S. Practicum (Mathematics), Rensselaer Polytechnic Institute, Troy, NY, Sep. 2001.
[3] I. V. Bajić, *Robust coding and packetization of images and intraframe-coded video*, M.S. Thesis (Electrical Engineering), Rensselaer Polytechnic Institute, Troy, NY, Jun. 2000.
[4] I. V. Bajić, *Digital signal processing techniques in the analysis of DNA/RNA and protein sequences*, B.Sc.Eng. Thesis (Electronic Engineering), University of Natal, Durban, South Africa, Oct.1998. (**Best Thesis Award**)