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. (*summa cum laude*)

Work experience

- **Professor**, School of Engineering Science, Simon Fraser University, Burnaby, BC, Canada
  Teaching: ENSC 861 – Source Coding for Digital Communications (Fall 2015)
  ENSC 813 – Deep Learning Systems (Fall 2017, Spring 2019, 2020, 2021, 2022, 2024, 2026)
  ENSC 808 – Information Theory (Summer 2007, Spring 2008, 2010, 2012, 2023)
  ENSC 802 – Stochastic Systems (Fall 2010, 2011, 2012, 2016, 2021, 2022, 2023, 2025)
  ENSC 429 – Digital Signal Processing (Summer 2023, 2025)
  ENSC 428 – Digital Communications (Spring 2009, Summer 2014, Spring 2018, 2020)
  ENSC 424 – Multimedia Communications Engineering (Fall 2006-2011, Fall 2018)
  ENSC 380 – Linear Systems (Spring 2006, 2007, 2015, Fall 2019)
  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), ECE 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, analysis, and communications; machine/deep learning, collaborative intelligence

Selected honors

Research

- ***SFU Milestone Research Award*** (2025) [Institutional]
- ***SFU School of Engineering Research Award*** (2024) [Institutional]
- ***IEEE TCSVT Best Paper Award***, IEEE Trans. Circuits and Systems for Video Technology (2023) [International]
- ***IEEE MSA TC Best Paper Award***, for an IEEE ISCAS paper (2023) [International]
- ***Best Paper Runner-up***, IEEE International Symposium on Biomedical Imaging – ISBI (2023) [International]
- ***Best Paper – Honorable Mention***, IEEE MMSP (2022) [International]
- ***TIP Featured Article***, IEEE Trans. Image Processing (2021) [International]
- ***TMM Featured Article***, IEEE Trans. Multimedia (2021) [International]
- ***Discovery Accelerator Award***, Natural Sciences and Engineering Research Council – NSERC (2021) [National]
- ***Best Student Paper Finalist***, Asilomar Conference on Signals, Systems, and Computers (2020) [International]
- ***Best Student Paper Award***, IEEE International Conference on Image Processing - ICIP (2019) [International]
- ***Front Cover*** of the July/August issue of IEEE/ACM Trans. Audio, Speech, Language Process. (2016) [International]
- ***Best Paper Finalist***, IEEE International Conference on Multimedia & Expo - ICME (2013) [International]
- ***Best Paper Runner-up Award***, 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 of SPS Vancouver Chapter (2015) [Regional]

Service

- ***Outstanding Service Award***, IEEE ICME (2021) [International]

- ***Outstanding Area Chair Award***, IEEE ICME (2020) [International]
- ***Outstanding Reviewer Award***, IEEE ICME (2011, 2014), IEEE VCIP (2012, 2013), IEEE ICASSP (2019, 2022) [International]

Teaching

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

Professional activities and service

- Registered Professional Engineer in the Province of British Columbia (2007 – present)
- Senior Member of IEEE
- Chair (2013-2018) and Vice-Chair (2019 – 2021) of the IEEE Signal Processing Society Vancouver Chapter

Technical committees:

- IEEE Multimedia Signal Processing Technical Committee
    - Member (2017 – 2022)
    - Past Chair (2024), Chair (2022 – 2023), Vice Chair (2021 – 2022)
- IEEE Multimedia Systems and Applications Technical Committee – Member (2016 – 2023, 2024 – present)
- IEEE Multimedia Communications Technical Committee – Member
    - Chair of the Media Streaming Interest Group (MSIG) (2010 – 2012)
- IEEE Multimedia Computing Technical Committee – Member
- IEEE Image, Video, and Multidimensional Signal Processing Technical Committee – Affiliate Member

Journals:

- Senior Area Editor of *IEEE Signal Processing Letters* (2020 – 2025)
- Area Editor of *Signal Processing: Image Communication* (2018 – 2021)
- Associate Editor of *IEEE Signal Processing Magazine* (2015 – 2021)
- Associate Editor of *IEEE Transactions on Multimedia* (2016 – 2018)
- Lead Guest Editor for the *IEEE Communications Magazine*, special issue on "Interactive 3D Video Streaming" (2013)
- Reviewer for various journals: IEEE Trans. Image Processing, IEEE Trans. Signal Processing, IEEE Trans. Circuits Syst. Video Technol., IEEE Trans. Multimedia, IEEE Trans. Pattern Analysis and Machine Intelligence, and 20+ others

Conferences (senior roles only):

- TPC Chair, IEEE ICME 2025, Nantes, France
- TPC Co-Chair for Picture Coding Symposium (PCS) 2022, San Jose, CA
- General Co-Chair for IEEE MMSP 2022, Shanghai, China (virtual)
- General Co-Chair for IEEE DSLW 2022, Singapore (virtual)
- Workshops Chair for IEEE ICME 2021, Shenzhen, China
- TPC Co-Chair for IEEE Data Science and Learning Workshop (DSLW) 2021, Toronto, Canada (virtual)
- TPC Co-Chair for IEEE MMSP 2018, Vancouver, BC
- Student Program Chair for IEEE ICME 2016, IEEE GlobalSIP 2017 (organized first 3MT at each conference)
- 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

Funding agencies:

- Co-Chair (2019 – 2020, 2021 – 2022) and Member (2018 – 2019) of the NSERC Discovery Evaluation Group 1510 (Electrical and Computer Engineering)
- 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.

Publications

Journal papers:

[1] A. Harell, Y. Foroutan, N. Ahuja, P. Datta, B. Kanzariya, V. S. Somayazulu, O. Tickoo, A. de Andrade, and I. V. Bajić, “Rate-distortion theory in coding for machines and its application,” *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 47, no. 7, pp. 5501-5519, July 2025.

[2] P. Mayerhofer, C. Napier, D. C. Clarke, I. Bajić, and J. M. Donelan, "Neural networks can accurately identify individual runners from their foot kinematics, but fail to predict their running performance," *Journal of Biomechanics*, vol. 185, article no. 112663, May 2025.
[3] C. Dinesh, G. Cheung, S. Bagheri, and I. V. Bajić, "Efficient signed graph sampling via balancing & Gershgorin disc perfect alignment," *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 47, no. 4, pp. 2330-2348, April 2025.
[4] C. Shiranthika, H. Hadizadeh, P. Saeedi, and I. V. Bajić, "Adaptive asynchronous split federated learning for medical image segmentation," *IEEE Access*, vol. 12, pp. 182496-182515, 2024.
[5] H. Hadizadeh and I. V. Bajić, "Learned scalable video coding for humans and machines," *EURASIP J. Image and Video Processing*, vol. 2024, article no. 41, Special Issue on Visual Coding for Humans and Machines, Nov. 2024.
[6] B. Azizian and I. V. Bajić, "Privacy preserving autoencoder for collaborative object detection," *IEEE Trans. Image Processing*, vol. 33, pp. 4937-4951, Oct. 2024.
[7] P. Mayerhofer, I. Bajić, and J. M. Donelan, "Comparing the advantages and disadvantages of physics-based and neural network-based modelling for predicting cycling power," *Journal of Biomechanics*, vol. 169, article no. 112121, May 2024.
[8] H. Naderi and I. V. Bajić, "Adversarial attacks and defenses on 3D point cloud classification: A survey," *IEEE Access*, vol. 11, pp. 144274-144295, Dec. 2023.
[9] W.-H. Cheng, J.-N. Hwang, I. Bajic, R. Kawakami, S. Wang, J. Liu, "Emerging AI technologies for smart infrastructure," *APSIPA Trans. Signal and Information Processing*, vol. 12, no. 4, Oct. 2023.
[10] C. Shiranthika, P. Saeedi, and I. V. Bajić, "Decentralized learning in healthcare: A review of emerging techniques," *IEEE Access*, vol. 11, pp. 54188-54209, Jun. 2023.
[11] I. V. Bajić, M. Mrak, F. Dufaux, E. Magli and T. Chen, "Multimedia Signal Processing: A History of the Multimedia Signal Processing Technical Committee," *IEEE Signal Processing Magazine*, vol. 40, no. 4, pp. 72-79, Jun. 2023.
[12] C. Dinesh, G. Cheung, and I. V. Bajić, "Point cloud sampling via graph balancing and Gershgorin disc alignment," *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 45, no. 1, pp. 868-886, Jan. 2023.
[13] N. Shlezinger and I. V. Bajić, "Collaborative inference for AI-empowered IoT devices," *IEEE Internet of Things Magazine*, vol. 5, no. 4, pp. 92-98, Dec. 2022.
[14] S. R. Alvar, H. Choi, M. Ulhaq, and I. V. Bajić, "Joint image compression and denoising via latent-space scalability," *Frontiers in Signal Processing*, Sep. 2022.
[15] C. Dinesh, G. Cheung, and I. V. Bajić, "Point cloud video super-resolution via partial point coupling and graph smoothness," *IEEE Trans. Image Processing*, vol. 31, pp. 4117-4132, Jun. 2022.
[16] T. Tanaka, H. Choi, and I. V. Bajić, "Updating a dataset of labelled objects on raw video sequences with unique object IDs," *Data in Brief*, vol. 41, article no. 107892, Apr. 2022.
[17] H. Choi and I. V. Bajić, "Scalable image coding for humans and machines," *IEEE Trans. Image Processing*, vol. 31, pp. 2739-2754, Mar. 2022
[18] A. Harell, R. Jones, S. Makonin, and I. V. Bajić, "TraceGAN: Synthesizing appliance power signatures using generative adversarial networks," *IEEE Trans. Smart Grid*, vol. 12, no. 5, pp. 4553-4563, Sep. 2021.
[19] Md. Z. A. Bhotto, R. Jones, S. Makonin, and I. V. Bajić, "Short-term demand prediction using an ensemble of linearly-constrained estimators," *IEEE Trans. Power Systems*, vol. 36, no. 4, pp. 3163-3175, Jul. 2021.
[20] R. A. Cohen, H. Choi, and I. V. Bajić, "Lightweight compression of intermediate neural network features for collaborative intelligence," *IEEE Open J. Circuits Syst*., vol. 2, pp. 350-362, May 2021. (Special Section on ICME 2021)
[21] H. Choi and I. V. Bajić, "Affine transformation-based deep frame prediction," *IEEE Trans. Image Processing*, vol. 30, pp. 3321-3334, Feb. 2021. (TIP Featured Article)
[22] S. R. Alvar and I. V. Bajić, "Pareto-optimal bit allocation for collaborative intelligence," *IEEE Trans. Image Processing*, vol. 30, pp. 3348-3361, Feb. 2021.
[23] H. Choi, E. Hosseini, S. R. Alvar, R. A. Cohen, and I. V. Bajić, "A dataset of labelled objects on raw video sequences," *Data in Brief*, vol. 34, article no. 106701, Feb. 2021.
[24] H. Hadizadeh and I. V. Bajić, "Soft video multicasting using adaptive compressed sensing," *IEEE Trans. Multimedia*, vol. 23, pp. 12-25, Jan. 2021. (TMM Featured Article)
[25] C. Dinesh, G. Cheung, and I. V. Bajić, "Point cloud denoising via feature graph Laplacian regularization," *IEEE Trans. Image Processing*, vol. 29, pp. 4143-4158, Dec. 2020.
[26] Y. Wang, Y. Wu, J. Liang, I. V. Bajić, and A. Wang, "Light field all-in-focus image fusion based on spatially-guided angular information," *J. Vis. Commun. Image R.*, vol. 72, article no. 102878, Oct. 2020.
[27] H. Choi and I. V. Bajić, "Deep frame prediction for video coding," *IEEE Trans. Circuits Syst. Video Technol*., vol. 30, no. 7, pp. 1843-1855, Jul. 2020. (IEEE TCSVT Best Paper Award)

[28] C. Dinesh, S. Makonin, and I. V. Bajić, "Residential power forecasting based on affinity aggregation spectral clustering," *IEEE Access*, vol. 8, pp. 99431-99444, May 2020.
[29] L. Bragilevsky and I. V. Bajić, "Tensor completion methods for collaborative intelligence," *IEEE Access*, vol. 8, pp. 41162-41174, Feb. 2020.
[30] J. Fu, I. V. Bajić, and R. G. Vaughan, "Datasets for face and object detection in fisheye images," *Data in Brief*, vol. 27, article no. 104752, Dec. 2019.
[31] M. Gaur, S. Makonin, I. V. Bajić, and A. Majumdar, "Performance evaluation of techniques for identifying abnormal energy consumption in buildings," *IEEE Access*, vol. 7, pp. 62721-62733, May 2019.
[32] X. Shang, G. Wang, X. Zhao, Y. Zuo, J. Liang, and I. V. Bajić, "Weighting quantization matrices for HEVC/H.265-coded RGB videos," *IEEE Access*, vol. 7, pp. 36019-36032, Apr. 2019.
[33] C. Dinesh, S. Makonin, and I. V. Bajić, "Residential power forecasting using load identification and graph spectral clustering," *IEEE Trans. Circuits and Systems II: Express Briefs*, vol. 66, no. 11, pp. 1900-1904, Nov. 2019.
[34] H. Hadizadeh, A. R. Heravi, I. V. Bajić, and P. Karami, "A perceptual distinguishability predictor for JND-noise-contaminated images," *IEEE Trans. Image Processing*, vol. 28, no. 5, pp. 2242-2256, May 2019.
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[37] 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.
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[39] 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.
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[41] 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.
[42] 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.
[43] 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.
[44] 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.
[45] 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)
[46] 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.
[47] V. A. Mateescu and I. V. Bajić, "Visual attention retargeting," *IEEE MultiMedia*, vol. 23, no. 1, pp. 82-91, Jan.-Mar. 2016.
[48] 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)
[49] 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.
[50] 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.
[51] 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.
[52] H. Hadizadeh and I. V. Bajić, "Saliency-aware video compression," *IEEE Trans. Image Processing*, vol. 23, no. 1, pp. 19-33, Jan. 2014.
[53] 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)

[54] 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.
[55] 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.
[56] 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.
[57] 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.
[58] 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.
[59] 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.
[60] 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.
[61] 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.
[62] 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)
[63] 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.
[64] 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.
[65] 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.
[66] 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.
[67] 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.
[68] 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.
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[70] 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)
[71] 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.
[72] 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.
[73] 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)
[74] 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.
[75] 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)
[76] 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.
[77] 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] M. Khairi Atani, A. Harell, H. Choi, R. Yang, F. Racapé, and I. V. Bajić, "How universal are SAM2 features?" to be presented at Picture Coding Symposium, Aachen, Germany, Dec. 2025.

[2] R. Yang and I. V. Bajić, "Bit allocation transfer for perceptual quality enhancement of VVC intra coding," to be presented at Picture Coding Symposium, Aachen, Germany, Dec. 2025.
[3] C.-L. Wu, H. Choi, and I. V. Bajić, "Semantics-guided generative image compression," *Proc. IEEE ICIP*, pp. 1324-1329, Anchorage, AK, USA, Sep. 2025.
[4] I. V. Bajić, "Rate-accuracy bounds in visual coding for machines," *IEEE MIPR*, San Jose, CA, USA, Aug. 2025.
[5] C. Shiranthika, H. Hadizadeh, P. Saeedi, and I. V. Bajić, "SplitFedZip: Learned compression for data transfer reduction in split-federated learning," AAAI FLUID Workshop, Mar. 2025.
[6] M. Ulhaq and I. V. Bajić, "Learned compression of encoding distributions," *Proc. IEEE ICIP*, pp. 3716-3722, Abu Dhabi, UAE, Oct. 2024. (Top 5% Paper)
[7] H. Hadizadeh and I. V. Bajić, "Learned multimodal compression for autonomous driving," *Proc. IEEE MMSP*, Purdue University, IN, USA, Oct. 2024.
[8] H. Hadizadeh, S. F. Yeganli, B. Rashidi, and I. V. Bajić, "Mutual information analysis in multimodal learning systems," *Proc. IEEE MIPR*, San Jose, CA, USA, August 2024.
[9] A. de Andrade and I. V. Bajić, "Towards task-compatible compressible representations," *Proc. IEEE ICME Workshop on Coding for Machines*, Niagara Falls, Canada, July 2024.
[10] S. R. Alvar and I. V. Bajić, "Compressive feature selection for remote visual multi-task inference," *Proc. IEEE ICME Workshop on Coding for Machines*, Niagara Falls, Canada, July 2024.
[11] M. Ulhaq and I. V. Bajić, "Scalable human-machine point cloud compression," *Proc. Picture Coding Symposium*, Taichung, Taiwan, June 2024.
[12] D.-Y. Shin, T. Woinoski, I. V. Bajić, and S.-W. Lee, "A deep multi-object tracking technique in swimming video scenes," *Proc. IEEE ICCE-Asia*, Busan, Korea, Oct. 2023.
[13] C. Shiranthika, Z. Hafezi Kafshgari, P. Saeedi, and I. V. Bajić, "SplitFed resilience to packet loss: Where to split, that is the question," *Proc. MICCAI Workshop on Distributed, Collaborative and Federated Learning*, Vancouver, BC, Canada, Oct. 2023. (Spotlight Paper)
[14] Y. Foroutan, A. Harell, A. de Andrade, and I. V. Bajić, "Base layer efficiency in scalable human-machine coding," *Proc. IEEE ICIP*, Kuala Lumpur, Malaysia, Oct. 2023.
[15] K. Uyanik, S. F. Yeganli, and I. V. Bajić, "Grad-FEC: Unequal loss protection of deep features in collaborative intelligence," *Proc. IEEE ICIP*, Kuala Lumpur, Malaysia, Oct. 2023.
[16] I. V. Bajić, T. Saeedi-Bajić and K. Saeedi-Bajić, "Metaverse: A young gamer's perspective," *Proc. IEEE MMSP*, Poitiers, France, Sept. 2023.
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