

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. (<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 861 – Source Coding for Digital Communications (Fall 2015)
ENSC 813 – Deep Learning Systems (Fall 2017, Spring 2019, 2020)
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, 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)
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
- Machine learning, deep learning, collaborative intelligence

Selected honors

Research

- **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 Area Chair Award**, IEEE ICME (2020) [International]
- **Distinguished/Best Reviewer Award**, IEEE ICME (2011, 2014), IEEE VCIP (2012, 2013), IEEE ICASSP (2019) [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 – present) of the IEEE Signal Processing Society Vancouver Chapter

Technical committees:

- IEEE Multimedia Signal Processing Technical Committee
 - Member (2017 – present)
 - Vice Chair (2021 – present)
- IEEE Multimedia Systems and Applications Technical Committee – Member (2016 – 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 – present)
- Area Editor of *Signal Processing: Image Communication* (2018 – present)
- Associate Editor of *IEEE Signal Processing Magazine* (2015 – present)
- 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, and 20+ others

Conferences and workshops:

- General Co-Chair for IEEE MMSP 2022, Shanghai, China
- TPC Co-Chair for IEEE Data Science and Learning Workshop (DSLW) 2021, Toronto, Canada
- Co-Chair for IEEE ICME 2020 Workshop on Hyper-Realistic Multimedia for Enhanced Quality of Experience, London, UK
- Area Chair for IEEE ICIP 2020, Abu Dhabi, UAE
- Area Chair for IEEE ICME 2020, London, UK
- Area Chair for IEEE ICIP 2019, Taipei, Taiwan
- TPC Co-Chair for IEEE MMSP 2018, Vancouver, BC
- Area Chair for IEEE ICME 2018, San Diego, CA
- Student Program Chair for IEEE ICME 2016, IEEE GlobalSIP 2017 (organized first 3MT at each conference)
- Publicity Co-Chair for IEEE MMSP 2015; IEEE ISM 2017, 2018
- 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 IEEE ICME 2012, Melbourne, Australia, July 2012
- General Co-Chair of the IEEE Workshop on Streaming and Media Communications (StreamComm 2011) at IEEE ICME 2011, Barcelona, Spain, July 2011
- TPC Member for a number of conferences in the field, including IEEE ICIP, ICASSP, ICME, Globecom, ICC
- 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, MMSP 2018, etc.
- Reviewer for various conferences: ICIP, ICASSP, ICC, Globecom, ICME, VCIP, etc.

Funding agencies:

- Co-Chair (2019 – 2020) 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.

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. (*“Technological beauty” - Plank Magazine, July 2009.*)

Publications

Journal papers:

- [1] S. R. Alvar and I. V. Bajić, “Pareto-optimal bit allocation for collaborative intelligence,” accepted with minor revisions for publication in *IEEE Trans. Image Processing*, Jan. 2021.
- [2] Md. Z. A. Bhotto, R. Jones, S. Makonin, and I. V. Bajić, “Short-term demand prediction using an ensemble of linearly-constrained estimators,” accepted for publication in *IEEE Trans. Power Systems*, Jan. 2021.
- [3] 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.
- [4] H. Hadizadeh and I. V. Bajić, “Soft video multicasting using adaptive compressed sensing,” *IEEE Trans. Multimedia*, vol. 23, pp. 12-25, Jan. 2021.
- [5] 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.
- [6] 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.
- [7] 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. (Special Section on Learning-Based Image and Video Compression)
- [8] 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.
- [9] L. Bragilevsky and I. V. Bajić, “Tensor completion methods for collaborative intelligence,” *IEEE Access*, vol. 8, pp. 41162-41174, Feb. 2020.
- [10] 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.
- [11] 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.
- [12] 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.
- [13] 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.
- [14] 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.
- [15] C. Dinesh, I. V. Bajić, and G. Cheung, “Adaptive nonrigid inpainting of 3D point cloud geometry,” *IEEE Signal Processing Letters*, vol. 25, no. 6, pp. 878-882, Jun. 2018.
- [16] 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.
- [17] S. H. Khatonabadi, 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.
- [18] 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.
- [19] 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.
- [20] 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.

- [21] 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.
- [22] 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.
- [23] 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.
- [24] 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.
- [25] 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**)
- [26] 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.
- [27] V. A. Mateescu and I. V. Bajić, "Visual attention retargeting," *IEEE MultiMedia*, vol. 23, no. 1, pp. 82-91, Jan.-Mar. 2016.
- [28] 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)
- [29] 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.
- [30] 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.
- [31] 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.
- [32] H. Hadizadeh and I. V. Bajić, "Saliency-aware video compression," *IEEE Trans. Image Processing*, vol. 23, no. 1, pp. 19-33, Jan. 2014.
- [33] 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)
- [34] 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.
- [35] 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.
- [36] 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.
- [37] 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.
- [38] 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.
- [39] 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.
- [40] 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.
- [41] 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.
- [42] 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)
- [43] 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.
- [44] 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.
- [45] 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.

- [46] 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.
- [47] 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.
- [48] 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.
- [49] 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.
- [50] 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)
- [51] 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.
- [52] 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.
- [53] 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)
- [54] 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.
- [55] 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)
- [56] 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.
- [57] 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] I. V. Bajić, "Latent space inpainting for loss-resilient collaborative object detection," accepted for presentation at *IEEE ICC'21*, Montreal, Canada, Jun. 2021.
- [2] I. V. Bajić, W. Lin, and Y. Tian, "Collaborative intelligence: challenges and opportunities," accepted for presentation at *IEEE ICASSP'21*, Toronto, Canada, Jun. 2021.
- [3] M. Ulhaq and I. V. Bajić, "Latent space motion analysis for collaborative intelligence," accepted for presentation at *IEEE ICASSP'21*, Toronto, Canada, Jun. 2021.
- [4] S. Lee and I. V. Bajić, "Information flow through U-Nets," accepted for presentation at *IEEE ISBI'21*, Apr. 2020.
- [5] R. Jones, C. Klemenjak, S. Makonin, and I. V. Bajić, "Stop! Exploring Bayesian surprise to better train NILM," *Proc. 5th Int. Workshop on Non-Intrusive Load Monitoring (NILM'20)*, pp. 39-43, Nov. 2020.
- [6] H. Choi and I. V. Bajić, "A lightweight model for deep frame prediction in video coding," presented at *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, Nov. 2020. **(Best Student Paper Finalist)**
- [7] C. Dinesh, G. Cheung, F. Wang, and I. V. Bajić, "Sampling of 3D point cloud via Gershgorin disc alignment," *Proc. IEEE ICIP'20*, pp. 2736-2740, Abu Dhabi, UAE, Oct. 2020.
- [8] R. A. Cohen, H. Choi, and I. V. Bajić, "Lightweight compression of neural network feature tensors for collaborative intelligence," *Proc. IEEE ICME'20*, London, UK, Jul. 2020.
- [9] H. Choi, R. A. Cohen, and I. V. Bajić, "Back-and-forth prediction for deep tensor compression," *Proc. IEEE ICASSP'20*, pp. 4467-4471, Barcelona, Spain, May 2020.
- [10] S. R. Alvar and I. V. Bajić, "Bit allocation for multi-task collaborative intelligence," *Proc. IEEE ICASSP'20*, pp. 4342-4346, Barcelona, Spain, May 2020.
- [11] C. Dinesh, G. Cheung, and I. V. Bajić, "Super-resolution of 3D color point clouds via fast graph total variation," *Proc. IEEE ICASSP'20*, pp. 1983-1987, Barcelona, Spain, May 2020.
- [12] T. Woinoski, A. Harell, and I. V. Bajić, "Towards automated swimming analytics using deep neural networks," *AAAI Workshop on AI in Team Sports*, New York, NY, Feb. 2020.
- [13] A. Harell and I. V. Bajić, "The data gap in sports analytics and how to close it," *AAAI Workshop on AI in Team Sports*, New York, NY, Feb. 2020.
- [14] E. Ideli, B. Sharpe, I. V. Bajić, and R. G. Vaughan, "Visually assisted time-domain speech enhancement," *Proc. IEEE GlobalSIP'19*, Ottawa, ON, Nov. 2019.

- [15] C. Dinesh, G. Cheung, and I. V. Bajić, "3D point cloud color denoising using convex graph-signal smoothness priors," *Proc. IEEE MMSP'19*, Kuala Lumpur, Malaysia, Sep. 2019.
- [16] S. R. Alvar and I. V. Bajić, "Multi-task learning with compressible features for collaborative intelligence," *Proc. IEEE ICIP'19*, pp. 1705-1709, Taipei, Taiwan, Sep. 2019. **(Best Student Paper Award)**
- [17] C. Dinesh, G. Cheung, and I. V. Bajić, "3D point cloud super-resolution via graph total variation on surface normals," *Proc. IEEE ICIP'19*, pp. 4390-4394, Taipei, Taiwan, Sep. 2019. **(Spotlight Paper – top 10%)**
- [18] A. Harell, S. Makonin, and I. V. Bajić, "WaveNILM: A causal neural network for power disaggregation from the complex power signal," *Proc. IEEE ICASSP'19*, pp. 8335-8339, Brighton, UK, May 2019.
- [19] J. Fu, S. R. Alvar, I. V. Bajić, and R. G. Vaughan, "FDDB-360: Face detection in 360-degree fisheye images," *Proc. IEEE MIPR'19*, pp. 15-19, San Jose, CA, Mar. 2019. **(Invited)**
- [20] E. Ideli, R. G. Vaughan, and I. V. Bajić, "Speech intelligibility of microphone arrays in reverberant environments with interference," *Proc. IEEE MMSP'18*, Vancouver, BC, Aug. 2018.
- [21] H. Choi and I. V. Bajić, "Near-lossless deep feature compression for collaborative intelligence," *Proc. IEEE MMSP'18*, Vancouver, BC, Aug. 2018.
- [22] C. Dinesh, G. Cheung, I. V. Bajić, and C. Yang, "Fast 3D point cloud denoising via bipartite graph approximation and total variation," *Proc. IEEE MMSP'18*, Vancouver, BC, Aug. 2018.
- [23] S. R. Alvar and I. V. Bajić, "MV-YOLO: Motion vector-aided tracking by semantic object detection," *Proc. IEEE MMSP'18*, Vancouver, BC, Aug. 2018.
- [24] H. Choi and I. V. Bajić, "Deep feature compression for collaborative object detection," *Proc. IEEE ICIP'18*, pp. 3743-3747, Athens, Greece, Oct. 2018. **(IEEE SPS Student Travel Grant)**
- [25] 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. **(Featured in IEEE Signal Processing Magazine, May 2020)**
- [26] H. Choi and I. V. Bajić, "High efficiency compression for object detection," *Proc. IEEE ICASSP'18*, pp. 1729-1796, Calgary, AB, Apr. 2018.
- [27] S. R. Alvar, H. Choi, and I. V. Bajić, "Can you tell a face from a HEVC bitstream?" *Proc. IEEE MIPR'18*, Miami, FL, Apr. 2018. **(Invited)**
- [28] C. Dinesh, I. V. Bajić, and G. Cheung, "Exemplar-based framework for 3D point cloud hole filling," *Proc. IEEE VCIP'17*, pp. 1-4, St. Petersburg, FL, Dec. 2017.
- [29] H. Choi and I. V. Bajić, "HEVC intra features for human detection," *Proc. IEEE GlobalSIP'17*, pp. 393-397, Montreal, QC, Nov. 2017.
- [30] C. Dinesh, S. Makonin, and I. V. Bajić, "Incorporating time-of-day usage patterns into non-intrusive load monitoring," *Proc. IEEE GlobalSIP'17*, pp. 1110-1114, Montreal, QC, Nov. 2017.
- [31] L. Bragilevsky and I. V. Bajić, "Deep learning for Amazon satellite image analysis," *Proc. IEEE PacRim'17*, Victoria, BC, Aug. 2017.
- [32] J. Lin and I. V. Bajić, "Automatic image cropping based on bottom-up saliency and top-down semantics," *Proc. IEEE PacRim'17*, Victoria, BC, Aug. 2017.
- [33] H. Choi and I. V. Bajić, "Corner proposals from HEVC bitstreams," *Proc. IEEE ISCAS'17*, pp. 1-4, Baltimore, MD, May 2017.
- [34] M. P. Stapleton and I. V. Bajić, "Robust domain-filling plumb-line lens distortion correction," *Proc. IEEE ISM'16*, pp. 507-514, San Jose, CA, Dec. 2016. **(Invited)**
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