



Jorge Ulises Muñoz Minjares

Tel.

E-mail:

Adscripción

Posición Laboral

Profesor de tiempo completo UAZ

Área de Especialidad

Procesamiento Digital de Señales e Imágenes

Cuerpo Académico

Semblanza

Jorge Ulises Muñoz Minjares obtuvo los grados de Ingeniero en Comunicaciones y Electrónica por la Universidad Autónoma de Zacatecas (UAZ) en el 2010, Maestría y Doctorado en Ingeniería Eléctrica con especialidad en procesamiento digital de señales en la Universidad de Guanajuato División de Ingenierías Campus Salamanca-Irapuato, en 2012 y 2018, respectivamente. Actualmente es Profesor de Tiempo Completo (PTC) de la UAZ y colabora en diferentes proyectos de investigación con universidades nacionales e internacionales. Sus intereses de investigación son referentes al Procesamiento Digital de Señales e Imágenes tanto de comunicaciones como biológicas. El Dr. Jorge Ulises Muñoz Minjares pertenece al Sistema Nacional de Investigadores (Nivel I) y es miembro del IEEE.

Líneas de generación y Aplicación del conocimiento

- Procesamiento de Bio-señales
 - Predicción, Estimación y Filtrado.
 - Implementación y desarrollo de algoritmos para datos genéticos
- Procesamiento Digital de Imágenes
 - Implementación de algoritmos para la detección de patrones.



- Telecomunicaciones
 - Sistemas de comunicación GPS
 - Internet de las Cosas

Últimos trabajos publicados:

- [1] Muñoz-Minjares, J., Shmaliy, Y. S., & Popova, T. (2019). Correcting estimates of DNA CNAs using improved confidence masks tuned to gold standard. *IET Signal Processing*, 13(4), 464-471, 2019.
- [2] Lastre-Domínguez, C., Shmaliy, Y. S., Ibarra-Manzano, O., Munoz-Minjares, J., & Morales-Mendoza, L. J. (2019). ECG signal denoising and features extraction using unbiased FIR smoothing. *BioMed research international*, 2019.
- [3] Vazquez-Olguin, M., Shmaliy, Y. S., Ibarra-Manzano, O., Munoz-Minjares, J., & Lastre Dominguez, C. (2019). Object tracking over distributed wsns with consensus on estimates and missing data. *IEEE Access*, 7, pp. 39448-39458, 2019
- [4] Munoz-Minjares, J., Shmaliy, Y. S.: Matching Confidence Masks with Experts Annotations for Estimates of Chromosomal Copy Number Alterations. In *Journal of genetic Disorders*, iMedPub Journals, Vol. 1, no. (1:9).
- [5] Munoz-Minjares, Jorge, Shmaliy, Y.S., Morales-Mendoza, Luis J., Vazquez-Olguin, Miguel, and Lastre-Dominguez, Carlos: Accurate jitter computation in CNA breakpoints using hybrid confidence masks with applications to snp array probing. *IEEE Access*.
- [6] Munoz-Minjares Jorge, and Shmaliy, Yuriy S.: Improving estimates of the breakpoints in genome copy number alteration profiles with confidence masks. *Biomedical Signal Processing and Control*, 31:238-248.
- [7] Ramirez, M. L., Esparza, R. V., Reyna, R. O., Reyna, R. O., Minjares, J. U. M., Chavez, O. V., and Chimal, R. J. P. (2016): A Novel Methodology for Calculating Heart Rate using Images Processing. *IEEE Latin America Transactions*, 14(8), 3522-3527.
- [8] Munoz-Minjares, J., and Shmaliy, Y. S. (2016). The Role of Optimal Detection of CNAs and Error Analysis Using Next Generation Sequencing. *Next Generat Sequenc and Applic*, 3(141), 2.



- [9] MunozMinjares, J., Shmaliy, Y., and Ibarra–Manzano, O.: Enhancing Estimates of Breakpoints in Genome Copy Number Alteration using Confidence Masks. In *Advanced Biosignal Processing and Diagnostic Methods*, InTech.
- [10] Munoz, J.U., Cabal, J. , and Shmaliy, Y. S.: Confidence masks for genome DNA copy number variations in applications to HR–CGH array measurements. In: *Biomed. Signal Process. Contr.*, vol. 13, pp. 337–344.
- [11] Munoz J.U., Shmaliy, Y.S., and Cabal, J.: Confidence limits for genome DNA copy number variations in HR-CGH array measurements. In: *Biomed. Signal Process. Contr.*, vol. 10, pp. 166-173.

Publicaciones en Conferencias (Congresos)

- [1] Lastre-Domínguez, C., Shmaliy, Y. S., Ibarra-Manzano, O., Vazquez-Olguin, M., & Munoz-Minjares, J. (2018, September). ECG Signals Denoising in State Space using UFIR Filtering for Features Extraction. In *2018 15th International Conference on Electrical Engineering, Computing Science and Automatic Control (CCE)* (pp. 1-6). IEEE.
- [2] MUNOZ–MINJARES, JORGE., SHMALIY, Y., LOPEZ–RAMIREZ, MISAEL, and CRUZ–DUARTE, J. M. Identifying Outliers in HRV–Seizure Signals using p-shift UFIR Baseline Estimates, *WSEAS TRANSACTIONS on SIGNAL PROCESSING*, pp. 109-114, 2018.
- [3] Jorge Munoz–Minjares , Yuriy S. Shmaliy, Tatiana Popova, and R. J. Perez–Chimal: Matching Confidence Masks with Experts Annotations for Estimates of Chromosomal Copy Number Alterations. 2018 6th International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO), Granada, Spain.
- [4] Jorge Munoz-Minjares, Yuriy S Shmaliy, Ro Olivera-Reyna, Re Olivera-Reyna, and O. Vite-Chavez: Approximation of jitter probability in the breakpoints using aep distribution and confidence masks of scna. In *Power, Electronics and Computing (ROPEC), 2017 IEEE International Autumn Meeting on*, pp. 1–6, Ixtapa, Mexico.
- [5] Jorge M. Cruz-Duarte, Ignacio Martin-Diaz, J. U. Munoz-Minjares, Luis A. Sanchez-Galindo, C. Rodrigo Correa–Cely: Primary Study on the Stochastic Spiral Optimization Algorithm. In *Power, Electronics and Computing (ROPEC), 2017 IEEE International Autumn Meeting on*, Ixtapa, Mexico.
- [6] J.U. Munoz–Minjares, Y.S., Shmaliy, L.J., Morales–Mendoza, and O. Vite–Chavez: Jitter Approximation and Confidence Masks in simulated SCNA using AEP distribution. 2017 16th Mexican International Conference on Artificial Intelligence, Ensenada, B.C., Mexico.
- [7] Jorge Munoz-Minjares, Yuriy S Shmaliy, Ro Olivera–Reyna, Re Olivera-Reyna, and RJ Perez-Chimal: Jitter representation in scna breakpoints using asymmetric exponential power



- distribution. In Electrical Engineering, Computing Science and Automatic Control (CCE), 2017 14th International Conference on, pages 1–5, IEEE.
- [8] Munoz–Minjares Jorge, Yuriy S Shmaliy, Re Olivera–Reyna, and O. Vite–Chavez. Improving approximation of jitter probability in the breakpoints of simulated copy number alterations. In Electrical Engineering, Computing Science and Automatic Control (CCE), 2016 13th International Conference on, pages 1–5. IEEE.
- [9] Munoz J.U. and Shmaliy Y.S.: Improving Jitter Distribution in the Breakpoints of Genome CNVs. In: International Conference on Energy Systems Environment, Entrepreneurship and Innovation (ICESEEI'16), Barcelona, Spain.
- [10] Munoz J.U. and Shmaliy Y.S.: Bounding Errors in Estimates of Genome Copy Number Variations Using SNP Array. In: International Journal of Biology and Biomedical Engineering, Volume 9.
- [11] Munoz–Minjares, Jorge and Yuriy S Shmaliy: An algorithm for bounding errors in estimate of genome cnvs using snp array technology. In Advances in Artificial Intelligence and Soft Computing, (MICAI), 2015 Proceedings of the 14th Mexican International Conference on, pages 1–5. Springer.
- [12] Munoz J.U., Shmaliy, Y.S. and Aragon, J.: Noise Studies in Measurements and Estimates of Stepwise Changes in Genome DNA Chromosomal Structures. In: Proc. Int. Conf. on Pure Mathematics, Applied Mathematics, Computational Methods (PMAMCM 2014), Santorini Island, Greece.
- [13] Munoz J.U., Cabal, J. and Shmaliy, Y.S.: Effect of noise on estimate bounds for genome DNA structural changes. In: WSEAS Trans. on Biology and Biomedicine, vol. 11, pp.52–61.
- [14] Munoz J.U. and Shmaliy, Y.S.: Approximate Jitter Probability in the Breakpoints of Genome Copy Number Variations. In: 10th International Conference on Electrical Engineering, Computing Science and Automatic Control, (CCE). ISBN:978-1-4799-1461-6, Mexico-City.
- [15] Munoz J.U., Cabal, J. and Shmaliy, Y.S.: Probabilistic bounds for estimates of genome DNA copy number variations using HR-CGH microarray. In: 21st European Signal Processing Conference (EUSIPCO-2013), Marrakech, Morocco.
- [16] Munoz J.U., Cabal, J. and Shmaliy, Y.S.: Jitter probability in the breakpoints of discrete sparse piecewise-constant signals. In: Proc. 21st European Signal Process. Conf. (EUSIPCO), Marrakech, Morocco.
- [17] Munoz J.U., Ibarra, O. and Shmaliy, Y. S.: Maximum likelihood estimation of DNA copy number variations in HR-CGH arrays data. In: Proc. 12th WSEAS Int. Conf. on Signal Process., Comput. Geometry and Artif. Vision (ISCGAV' 12), Proc. 12th WSEAS Int. Conf. on Systems Theory and Sc. Comput. (ISTASC' 12), pp. 45-50, Istanbul, Turkey.



- [18] Olivera R., Vite O., Munoz J.U. and Shmaliy, Y. S.: Linear Models Estimation in Receiver Channels with Imbedded DSP Units Using Optimal FIR Structures. In: Proc. 12th WSEAS Int. Conf. on Signal Process., Comput. Geometry and Artif. Vision (ISCGAV' 12), Proc. 12th WSEAS Int. Conf. on Systems Theory and Sc. Comput. (ISTASC' 12), pp. 45-50, Istanbul, Turkey.

- [19] Vite O., Olivera R., Munoz J.U., Shmaliy, Y. S. and Ibarra, O.: Efficient Denoising of Piecewise-Smooth Signals with Forward-Backward FIR Smoothers. In: 6th WSEAS International Conference on Circuits, Systems, Signal and Telecommunications (CSST'12), Volume: 2012.

- [20] Olivera R., Munoz J.U., Vite O., Olivera R. and Cervantes J.M.: Numerical Comparison Between Three Finite Impulse Response (FIR) Filters in the Heart Rate Estimation Problem in an ECG Signal Corrupted by Additive White Gaussian Noise. In: 1st International Congress on Instrumentation and Applied Sciences (CCADET).