

1. Lista publicațiilor relevante

1. Diana M. Coroama, Laura Dioșan, Teodora Telecan, Iulia Andras, Nicolae Crișan, Paul Medan, Anca Andreica, Cosmin Caraiani, Andrei Lebovici, Bianca Boca and **Zoltán Bálint**. Fully automated bladder tumor segmentation from T2 MRI images using 3D U-Net algorithm. *Front. Oncology. Sec. Genitourinary Oncology* 2023. 13:1096136. doi: 10.3389/fonc.2023.1096136
2. Larisa-Gabriela Coroamă, Laura Dioșan, Teodora Telecan, Iulia Andras, Nicolae Crișan, Anca Andreica, Cosmin Caraiani, Andrei Lebovici, **Zoltán Bálint**, Bianca Boca. A light, 3D UNet based architecture for fully automatic segmentation of prostate lesions from T2-MRI images. *Current Medical Imaging* 2023. 20: e220523217208. DOI: 10.2174/1573405620666230522151445
3. Foris V, Kovacs G, Avian A, **Bálint Z**, et al. Apelin-17 to diagnose idiopathic pulmonary arterial hypertension: A biomarker study. *Front. Physiol.* 2023. 13:986295. doi: 10.3389/fphys.2022.986295
4. R.R. Galea, L. Dioșan, A. Andreica, L. Popa, S. Manole, **Z. Bálint**. 2021. Region-of-interest-based cardiac image segmentation with deep learning. *Applied Sciences*, 11, 1965. doi.org/10.3390/app11041965
5. R. Mărginean, A. Andreica, L. Dioșan, **Z. Bálint**. 2020. Butterfly Effect in Chaotic Image Segmentation. *Entropy* 22:1028. doi:10.3390/e22091028.
6. S.D. Iancu, C. Albu, L. Chiriac, R. Moldovan, A. Stefancu, V. Moisoiu, V. Coman, L. Szabo, N. Leopold, **Z. Bálint**. 2020. Assessment of gold-coated iron oxide nanoparticles as negative T2 contrast agent in small animal MRI studies. *International Journal of Nanomedicine*. 15:4811—4824. <https://doi.org/10.2147/IJN.S253184>.
7. A. Stefancu, V. Moisoiu, C. Bocsa, **Z. Bálint**, D. T. Cosma, I. A. Veresiu, V. Chis, N. Leopold and F. Elec. 2018. SERS-based quantification of albuminuria in the normal-to-mildly increased range. *Analyst* 143:5372-5379 doi:10.1039/C8AN01072B.
8. Pienn M, Burgard C, Payer C, Avian A, Urschler M, Stollberger R, Olschewski A, Olschewski H., Johnson T, Meinel FG, **Bálint Z**. 2018. Healthy Lung Vessel Morphology Derived From Thoracic Computed Tomography. *Frontiers in Physiology* 9:346. doi: 10.3389/fphys.2018.00346.
9. Helmberger M, M Pienn, M Urschler, P Kullnig, R Stollberger, G Kovacs, A Olschewski, H Olschewski and **Z Bálint**. 2014. Quantification of tortuosity and fractal dimension of the lung vessels in pulmonary hypertension patients. *PLoS One*. 9(1):e87515.
10. Auer-Grumbach M., Olschewski A., Papić L., Kremer H., McEntagart M.E., Uhrig S., Fischer C., Fröhlich E., **Bálint Z**, et al. 2010. Alterations in the ankyrin domain of TRPV4 cause congenital distal SMA, scapuloperoneal SMA and HMSN2C. *Nature Genetics* 42(2):160-4.

2. Teza de doctorat

2007 – doctorat în științe medicale teoretice – biofizică, Universitatea din Szeged, Szeged, Ungaria: „*Investigating biological samples with atomic force microscope: from living cells to molecular level*” - Investigarea probelor biologice cu microscopul de forță atomică: de la celule vii la nivel molecular

Teza de abilitare

2015 – abilitare în biofizică și fizică medicală – Departamentul de Radiologie, Universitatea de medicină din Graz, Graz, Austria: „*Non-invasive diagnosis of pulmonary hypertension with computed tomography*” – Diagnosticul neinvaziv a hipertensiunii pulmonare cu tomografie computerizată

3. Articole

2023

1. G.A.M. Salagean, K. Varga, **Z. Bálint**, D. Portik. In Vivo Lens Dosimetry in a Case of En Face Electron Adjuvant Radiotherapy for Cutaneous Nasal Bridge Basal Cell Carcinoma: A Case Report. *Journal of Medical and Radiation Oncology* 2023, II, 2, 1 October 2023, 71 - 77 DOI: 10.53011/JMRO.2023.02.09
IF:
IF: 1.315 Citations: 0
2. Bianca Boca, Cosmin Caraiani, Teodora Telecan, Roxana Pintican, Andrei Lebovici, Iulia Andras, Nicolae Crisan, Alexandru Pavel, Laura Diosan, **Zoltan Balint**, Monica Lupșor-Platon, Mircea Marian Buruian. MRI-Based Radiomics in Bladder Cancer: A Systematic Review and Radiomics Quality Score Assessment. *Diagnostics* 2023, 13(13), 2300; <https://doi.org/10.3390/diagnostics13132300>
IF: 3.6 Citations: 0
3. Larisa-Gabriela Coroamă, Laura Dioșan, Teodora Telecan, Iulia Andras, Nicolae Crișan, Anca Andreica, Cosmin Caraiani, Andrei Lebovici, **Zoltán Bálint**, Bianca Boca. A light, 3D UNet based architecture for fully automatic segmentation of prostate lesions from T2-MRI images. *Current Medical Imaging* 2023. 20: e220523217208. DOI: 10.2174/1573405620666230522151445
IF: 1.315 Citations: 0
4. Diana M. Coroama, Laura Dioșan, Teodora Telecan, Iulia Andras, Nicolae Crisan, Paul Medan, Anca Andreica, Cosmin Caraiani, Andrei Lebovici, Bianca Boca and **Zoltán Bálint**. Fully automated bladder tumor segmentation from T2 MRI images using 3D U-Net algorithm. *Front. Oncology. Sec. Genitourinary Oncology* 2023. 13:1096136. doi: 10.3389/fonc.2023.1096136
IF: 5.738 Citations: 0
5. Foris V, Kovacs G, Avian A, **Bálint Z**, Douschan P, Ghanim B, Klepetko W, Olschewski A and Olschewski H. Apelin-17 to diagnose idiopathic pulmonary arterial hypertension: A biomarker study. *Front. Physiol.* 2023. 13:986295. doi: 10.3389/fphys.2022.986295
IF: 4.755 Citations: 1
6. Cosimo Bruni, Mariaelena Occhipinti, Michael Pienn, Gianna Camiciottoli, Maurizio Bartolucci, Silvia Bosello, Christian Payer, **Zoltán Bálint**, Anna Rita Larici, Alessandra Tottoli, Lorenzo Tofani, Enrico De Lorenzis, Gemma Lepri, Silvia Bellando-Randone, Amelia Spinella, Dilia Giuggioli, Francesco Masini, Giovanna Cuomo, Federico Lavorini, Stefano Colagrande, Horst Olschewski, Marco Matucci-Cerinic. Lung vascular changes as early biomarkers of systemic sclerosis-related interstitial lung disease. *Rheumatology – (Oxford)* 2023. 62(2):696-706. doi: 10.1093/rheumatology/keac311.
IF: 7.580 Citations: 1

2022

7. Telecan, T.; Andras, I.; Crisan, N.; Giurgiu, L.; Cata, E.D.; Caraiani, C.; Lebovici, A.; Boca, B.; **Bálint, Z.**; Diosan, L.; Lupșor-Platon, M. More than Meets the Eye: Using Textural Analysis and Artificial Intelligence as Decision Support Tools in Prostate Cancer Diagnosis - A Systematic Review. *J. Pers. Med.* 2022, 12, 983. <https://doi.org/10.3390/jpm12060983>
IF: 4.453 Citations: 2

2021

11. Simona Manole, Claudia Budurea, Sorin Pop, Alin M. Iliescu, Cristiana A. Ciortea, Stefania D. Iancu, Loredana Popa, Mihaela Coman, Laszlo Szabo, Vasile Coman, **Zoltán Bálint**. 2021. Correlation between Volumes Determined by Echocardiography and Cardiac MRI in Controls and Atrial Fibrillation Patients. *Life* 11(12), 1362; doi.org/10.3390/life11121362
IF: 3.780 Citations: 0

12. Vlad Moisoiu, Stefania D Iancu, Andrei Stefancu, Tudor Moisoiu, Barbara Pardini, Mihnea P Dragomir, Nicolae Crisan, Lucretia Avram, Dana Crisan, Iulia Andras, Daniela Fodor, Loredana F Leopold, Carmen Socaciu, **Zoltán Bálint**, Ciprian Tomuleasa, Florin Elec, Nicolae Leopold. 2021. SERS liquid biopsy: an emerging tool for medical diagnosis. *Colloids and Surfaces B: Biointerfaces*, 208, 112064. doi.org/10.1016/j.colsurfb.2021.112064
IF: 5.268 Citations: 23

13. D. Dumitru, A. Andreica, L. Dioşan, **Z. Bálint**. 2021. A Transfer Learning Approach on the Optimization of Edge Detectors for Medical Images Using Particle Swarm Optimization. *Entropy*, 23(4), 414. doi.org/10.3390/e23040414
IF: 2.524 Citations: 4

14. R.R. Galea, L. Dioşan, A. Andreica, L. Popa, S. Manole, **Z. Bálint**. 2021. Region-of-interest-based cardiac image segmentation with deep learning. *Applied Sciences*, 11, 1965. doi.org/10.3390/app11041965
IF: 2.679 Citations: 8

2020

2018

Derived From Thoracic Computed Tomography. *Frontiers in Physiology* 9:346. doi: 10.3389/fphys.2018.00346

IF: 3,394

2016

25. Payer C, Pienn M, **Bálint Z**, Shekhtsov A, Talakic E, Nagy E, Olschewski A, Olschewski H, Urschler M. 2016. Automated integer programming based separation of arteries and veins from thoracic CT images. *Medical image analysis* 34:109-122. doi: 10.1016/j.media.2016.05.002.
IF: 4,565 Citations: 21

26. Foris V, Kovacs G, Marsh LM, **Bálint Z**, Tötsch M, Avian A, Douschan P, Ghanim B, Klepetko W, Olschewski A, Olschewski H. 2016. CD133+ cells in pulmonary arterial hypertension. *Eur Respir J*. 2016 Aug;48(2):459-69. doi: 10.1183/13993003.01523-2015.
IF: 8,332 Citations: 15

27. Kovacs G, Kleinschek D, Kwapiszewska G, **Bálint Z**, Olschewski H and Olschewski A. 2016 [Research in Austria - the Ludwig Boltzmann Institute for Lung Vascular Research]. *Pneumologie* 70(5):331-335. doi: 10.1055/s-0042-104767
IF: 0,48 Citations: 0

28. Jandl K, Stacher E, **Bálint Z**, Sturm E, Maric J, Peinhaupt M, Luschnig P, Aringer I, Fauland A, Konya V, Dahlen SE, Wheelock CE, Kratky D, Olschewski A, Marsche G, Schuligoj R, Heinemann A. 2016. Activated prostaglandin D2 receptors on macrophages enhance neutrophil recruitment into the lung. *Journal of Allergy Clinical Immunology* 137(3): 833-843.
IF: 11,476 Citations: 49

2015

29. Didiasova M, Zakrzewicz D, Magdolen V, Nagaraj C, **Bálint Z**, Rohde M, Preissner KT, Wygrecka M. 2015. STIM1/ORAI1-mediated Ca^{2+} influx regulates enolase-1 exteriorization. *Journal of Biological Chemistry*. 2015 May 8;290(19):11983-99.
 IF: 4,6 Citations: 32

2014

30. Veith C, Zakrzewicz D, Dahal B, **Bálint Z**, Murmann K, Wygrecka M, Seeger W, Schermuly R, Weissmann N and G. Kwapiszewska. 2014. Hypoxia- or PDGF-BB-dependent paxillin tyrosine phosphorylation in pulmonary hypertension is reversed by HIF-1 α depletion or imatinib treatment. *Thromb Haemost*. 2014 Dec; 112 (6): 1288-303.
IF: 6,094 Citations: 18

31. Balenga NA, Martínez-Pinilla E, Kargl J, Schröder R, Peinhaupt M, Platzer W, **Bálint Z**, Zamarbide M, Dopeso-Reyes I, Ricobaraza A, Pérez-Ortiz JM, Kostenis E, Waldhoer M, Heinemann A, Franco R.. 2014. Heteromerization of GPR55 and cannabinoid CB2 receptors modulates signalling. *Br J Pharmacol* – 2014 Dec; 171(23): 5387-406.
IF: 5,067 Citations: 84

32. Zabini D, A Heinemann, V Foris, C Nagaraj, P Nierlich, **Z Bálint**, G Kwapiszewska, IM Lang, W Klepetko, H Olschewski and A Olschewski. 2014. Comprehensive analysis of inflammatory markers in CTEPH patients. *Eur Respir J* - 2014 Oct; 44(4):951-62.
IF: 6,335 Citations: 74

33. Crnkovic S, Egemnazarov B, Seay U, Gattinger N, Marsh LM, **Bálint Z**, Kovacs G, Ghanim B, Klepetko W, Schermuly RT, Weissmann N, Olschewski A, Kwapiszewska G.

2014. NPY/NPY1R mediated vasoconstrictory and proliferative effects in pulmonary hypertension. *Br J Pharmacol* - 2014 Aug; 171(16):3895-907.
IF: 5,067 Citations: 33
34. Helmberger M, M Pienn, M Urschler, P Kullnig, R Stollberger, G Kovacs, A Olschewski, H Olschewski and **Z Bálint**. 2014. Quantification of tortuosity and fractal dimension of the lung vessels in pulmonary hypertension patients. *PLoS One*. 9(1):e87515.
IF: 3,73 Citations: 65
35. Pienn M, Kovacs G, Tscherner M, Avian A, Johnson TR, Kullnig P, Stollberger R, Olschewski A, Olschewski H and **Bálint Z.** 2014. Non-invasive determination of pulmonary hypertension with dynamic contrast-enhanced computed tomography: a pilot study. *European Radiology* 24(3):668-676.
IF: 3,548 Citations: 22
- 2013**
36. Pienn M, Kovacs G, Tscherner M, Johnson TR, Kullnig P, Stollberger R, Olschewski A, Olschewski H and **Bálint Z.** 2013. Determination of cardiac output with dynamic contrast-enhanced computed tomography. *Int J Cardiovasc Imaging* 29(8):1871-8.
IF: 2,648 Citations: 11
37. **Bálint Z**, Zabini D, Kónya V, Nagaraj C, Végh AG, Váró G, Wilhelm I, Fazakas C, Krizbai IA, Heinemann A, Olschewski H and Olschewski A. 2013. Double-stranded RNA attenuates the barrier function of human pulmonary artery endothelial cells. *PLoS One* 8(6):e63776.
IF: 3,73 Citations: 9
38. Nagaraj C, Tang B, **Bálint Z**, Wygrecka M, Hrzenjak A, Kwapiszewska G, Stacher E, Lindenmann J, Weir EK, Olschewski H, and Olschewski A. 2013. Src tyrosine kinase is crucial for potassium channel function in human pulmonary arteries. *Eur Respir J* 41(1):85-95.
IF: 6,335 Citations: 77
- 2012**
39. Zabini D, Nagaraj C, Stacher E, Lang IM, Nierlich P, Klepetko W, Heinemann A, Olschewski H, **Bálint Z**, Olschewski A. 2012. Angiostatic factors in the pulmonary endarterectomy material from chronic thromboembolic pulmonary hypertension patients cause endothelial dysfunction. *PLoS One*. 2012;7(8):e43793. Epub 2012 Aug 20.
IF: 3,73 Citations: 41
40. Fiorillo C, Moro F, Brisca G, Astrea G, Nesti C, **Bálint Z**, Olschewski A, Meschini MC, Guelly C, Auer-Grumbach M, Battini R, Pedemonte M, Romano A, Menchise V, Biancheri R, Santorelli FM, Bruno C. 2012. TRPV4 mutations in children with congenital distal spinal muscular atrophy. *Neurogenetics*. 13(3):195-203.
IF: 3,575 Citations: 25
41. Li Y., Connolly M., Nagaraj C., Tang B., **Bálint Z**, Popper H., Smolle-Juettner F.M., Lindenmann J., Kwapiszewska G., Aaronson P.I., Wohlkoenig C., Leithner K., Olschewski H., Olschewski A. 2012. PPAR β/δ , the Acute Signaling Factor in Prostacyclin-Induced Pulmonary Vasodilation. *Am J Respir Cell Mol Biol*. 46(3):372-379.
IF: 4,148 Citations: 32
- 2011**

42. Konya V., Philipose S., **Bálint Z.**, Olschewski A., Marsche G., Sturm E.M., Schicho R., Peskar B.A., Schuligoi R., Heinemann A. 2011. Interaction of eosinophils with endothelial cells is modulated by prostaglandin EP4 receptors. *Eur J Immunol.* 41(8):2379-89.
IF: 5,103 Citations: 22
43. Végh A.G., Nagy K., **Bálint Z.**, Kerényi Á., Rákely G., Váró G., and Szegletes Z. 2011. Effect of Antimicrobial Peptide-Amide: Indolicidin on Biological Membranes. *Journal of Biomedicine and Biotechnology* Article ID 670589.
IF: 2,436 Citations: 17

2010

44. Auer-Grumbach M., Olschewski A., Papić L., Kremer H., McEntagart M.E., Uhrig S., Fischer C., Fröhlich E., **Bálint Z.**, Tang B., Strohmaier H., Lochmüller H., Schlotter-Weigel B., Senderek J., Krebs A., Dick K.J., Petty R., Longman C., Anderson N.E., Padberg G.W., Schelhaas H.J., van Ravenswaaij-Arts C.M., Pieber T.R., Crosby A.H. and Guelly C. 2010. Alterations in the ankyrin domain of TRPV4 cause congenital distal SMA, scapuloperoneal SMA and HMSN2C. *Nature Genetics* 42(2):160-4.
IF: 36,377 Citations: 183

2009

45. Leithner K., Stacher E., Wurm R., Ploner F., Quehenberger F., Wohlkoenig C., **Bálint Z.**, Polachova J., Olschewski A., Samonigg H., Popper H.H. and Olschewski H. 2009. Nuclear and cytoplasmic death receptor 5 as prognostic factors in patients with non-small cell lung cancer treated with chemotherapy. *Lung Cancer* 65(1):98-104.
IF: 3,14 Citations: 28

2008

46. Elias E., C. Larroque, F. Cuisinier, **Z. Bálint** and C. Gergely. 2008. Tailoring GaN semiconductor surfaces with biomolecules. *Journal of Physical Chemistry B* 112:8799-8805.
IF: 4,189 Citations: 56

2007

47. **Bálint Z.**, K. Nagy, I. Laczkó, S. Bottka, G.A. Végh, Z. Szegletes and G. Váró. 2007. Adsorption and self-assembly of oligodeoxynucleotides onto a mica surface. *Journal of Physical Chemistry C* 111:17032-17037.
IF: 3,396 Citations: 10
48. Wilhelm I., A.E. Farkas, P. Nagyőszi, G. Váró, **Z. Bálint**, G.A. Végh, P.O. Couraud, I.A. Romero, B.B. Weksler and I.A. Krizbai. 2007. Regulation of cerebral endothelial cell morphology by extracellular calcium. *Physics in medicine and biology* 52:6261-6274.
IF: 2,528 Citations: 29
49. **Bálint Z.**, G.A. Végh, A. Popescu, M. Dima, C. Ganea and G. Váró. 2007. Direct observation of the protein motion during the photochemical reaction cycle of the bacteriorhodopsin. *Langmuir* 23:7225-7228.
IF: 4,009 Citations: 8
50. **Bálint Z.**, I.A. Krizbai, I. Wilhelm, A.E. Farkas, Á. Párducz, Z. Szegletes and G. Váró. 2007. Changes induced by hyperosmotic mannitol in cerebral endothelial cells: an atomic force microscopic study. *European Biophysics Journal* 36:113-120.
IF: 2,238 Citations: 24

51. Dima, M., **Balint, Z.**, Ganea, C. & Varo, G. 2007. Wavelength dependence of the electric signals generated in dried bR samples. *Rom. J. Biophys.* 17, 219–224
IF: 2,238 Citations: 24

2006

52. Laczkó I., G. Váró, S. Bottka, **Z. Bálint**, E. Illyés, E. Vass, J.-R. Bertrand, C. Malvy and M. Hollósi. 2006. N-Terminal acylation of the SV40 nuclear localization signal peptide enhances its oligonucleotide binding and membrane translocation efficiencies. *Archives of Biochemistry and Biophysics* 454:146-154.
IF: 2,969 Citations: 6
53. Dorogi M., **Z. Bálint**, C. Mikó, B. Vileno, M. Milas, K. Hernádi, L. Forró, G. Váró and L. Nagy. 2006. Stabilization effect of single walled carbon nanotubes on the functioning of photosynthetic reaction centers. *Journal of Physical Chemistry B* 110(43):21473-21479.
IF: 4,115 Citations: 44
54. Magyari K., **Z. Bálint**, V. Simon and G. Váró. 2006. The photochemical reaction cycle of retinal reconstituted bacteriorhodopsin. *Journal of Photochemistry and Photobiology B: Biology* 85(2):140-144.
IF: 1,909 Citations: 5

2004

55. **Bálint Z.**, M. Lakatos, C. Ganea, J.K. Lanyi, and G. Váró. 2004. The nitrate transporting photochemical reaction cycle of the pharaonis halorhodopsin. *Biophysical Journal* 86:1655-1663.
IF: 4,585 Citations: 12

2003

56. Dioumaev A.K., J.M. Wang, **Z. Bálint**, G. Váró, and J.K. Lanyi. 2003. Proton transport by proteorhodopsin requires that the retinal Schiff base counterion Asp-97 be anionic. *Biochemistry-US* 42:6582-6587.
IF: 3,922 Citations: 81

4. Brevete

1. M. Pienn, H. Olschewski, G. Kovacs, **Z. Bálint**. Erfahren und Vorrichtung zur detektion einer Pulmonalen Hypertonie basierend auf Impedanzkardiogrammen – Method and device for detecting a pulmonary hypertension based on impedance cardiograms. Patent Application No. AT 518396/2017 filed 5th August 2016, issued 15th October 2017. PCT/AT2017/060198 filed 4th August 2017. Published: 8th February 2018 No.: WO/2018/023146.
2. M. Pienn, **Z. Bálint**, H. Olschewski, R. Stollberger, G. Kovacs. *Methode z. Nichtinvasiven Diagnose von Pulmonaler Hypertonie* – Patent Application No. AT 512393/2013 filed 29th June 2012, issued 13th August 2013; PCT/AT2013/050127 filed 25th June 2013.
M. Pienn, **Z. Bálint**, H. Olschewski, R. Stollberger, G. Kovacs. *Method for Processing Images of Pulmonary Circulation and Device for Performing the Method* – Patent Publication No. US 2015/0206303-A1, issue date 23rd July 2015.
3. M. Pienn, **Z. Bálint**, H. Olschewski, R. Stollberger, G. Kovacs. *Methode z. Nichtinvasiven Diagnose von Pulmonaler Hypertonie* – Patent Application No. EU 13737520.0 filed 19th December 2014; EU Patent 2867856 issue date 6th May 2015.
3. SD Iancu, A. Stefancu, V. Moisoiu, L. Szabo, N. Leopold, **Z. Bálint**. *Procedeu de obtinere de nanoparticule cu miez de magnetita si invelis de aur stabilizate cu glucoza*. Patent Application 2019-09-16 Priority to ROA201900571A, 2020-07-30 - Publication of RO134304A0
4. R. Marginean, L. Diosan, A. Andreica, L. Popa, S. Manole, L. Szabo, **Z. Bálint**. *Dispozitiv pentru detectarea si localizarea automata a fibrozei pe imagini de IRM cardiac*, Patent Application - 2020-09-02 - Priority to RO202000551A, 2021-09-30 - Publication of RO135197A0