

# Balázs Benyó<sup>3</sup>

## List of Publications by Year in descending order

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Version: 2024-02-01

151  
papers

1,420  
citations

471509

17  
h-index

395702

33  
g-index

156  
all docs

156  
docs citations

156  
times ranked

1071  
citing authors

#	ARTICLE	IF	CITATIONS
1	Next-generation, personalised, model-based critical care medicine: a state-of-the art review of in silico virtual patient models, methods, and cohorts, and how to validation them. BioMedical Engineering OnLine, 2018, 17, 24.	2.7	143
2	Safety, efficacy and clinical generalization of the STAR protocol: a retrospective analysis. Annals of Intensive Care, 2016, 6, 24.	4.6	94
3	Cascade Control for Telerobotic Systems Serving Space Medicine*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 3759-3764.	0.4	83
4	An open architecture patient monitoring system using standard technologies. IEEE Transactions on Information Technology in Biomedicine, 2002, 6, 95-98.	3.2	73
5	The Clinical Utilisation of Respiratory Elastance Software (CURE Soft): a bedside software for real-time respiratory mechanics monitoring and mechanical ventilation management. BioMedical Engineering OnLine, 2014, 13, 140.	2.7	63
6	Induced L2-norm minimization of glucose-insulin system for Type I diabetic patients. Computer Methods and Programs in Biomedicine, 2011, 102, 105-118.	4.7	60
7	Simulation and control for telerobots in space medicine. Acta Astronautica, 2012, 81, 390-402.	3.2	55
8	A common periodic table of codons and amino acids. Biochemical and Biophysical Research Communications, 2003, 306, 408-415.	2.1	48
9	Generalisability of a Virtual Trials Method for Glycaemic Control in Intensive Care. IEEE Transactions on Biomedical Engineering, 2018, 65, 1543-1553.	4.2	46
10	Force Sensing and Force Control for Surgical Robots. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 401-406.	0.4	37
11	Efficient inhomogeneity compensation using fuzzy c-means clustering models. Computer Methods and Programs in Biomedicine, 2012, 108, 80-89.	4.7	36
12	Intensity inhomogeneity compensation and segmentation of MR brain images using hybrid c-means clustering models. Biomedical Signal Processing and Control, 2011, 6, 3-12.	5.7	32
13	NFC Applications and Business Model of the Ecosystem. , 2007, , .		30
14	Student attendance monitoring at the university using NFC. , 2012, , .		30
15	Glycemic control in the intensive care unit: A control systems perspective. Annual Reviews in Control, 2019, 48, 359-368.	7.9	30
16	Automatic Brain Tumor Segmentation in multispectral MRI volumes using a fuzzy c-means cascade algorithm. , 2015, , .		29
17	Respiratory mechanics assessment for reverse-triggered breathing cycles using pressure reconstruction. Biomedical Signal Processing and Control, 2016, 23, 1-9.	5.7	28
18	Estimating the true respiratory mechanics during asynchronous pressure controlled ventilation. Biomedical Signal Processing and Control, 2016, 30, 70-78.	5.7	26

#	ARTICLE	IF	CITATIONS
19	Model-based PEEP titration versus standard practice in mechanical ventilation: a randomised controlled trial. <i>Trials</i> , 2020, 21, 130.	1.6	22
20	A 3D insulin sensitivity prediction model enables more patient-specific prediction and model-based glycaemic control. <i>Biomedical Signal Processing and Control</i> , 2018, 46, 192-200.	5.7	21
21	Adaptation of the hypothalamic blood flow to chronic nitric oxide deficiency is independent of vasodilator prostanoids. <i>Brain Research</i> , 2007, 1131, 129-137.	2.2	18
22	Pilot Study of the SPRINT Glycemic Control Protocol in a Hungarian Medical Intensive Care Unit. <i>Journal of Diabetes Science and Technology</i> , 2012, 6, 1464-1477.	2.2	18
23	Digital Twins in Critical Care: What, When, How, Where, Why?. <i>IFAC-PapersOnLine</i> , 2021, 54, 310-315.	0.9	18
24	3D kernel-density stochastic model for more personalized glycaemic control: development and in-silico validation. <i>BioMedical Engineering OnLine</i> , 2019, 18, 102.	2.7	17
25	Validation of Detect2000-Based PetDetSim by Simulated and Measured Light Output of Scintillator Crystal Pins for PET Detectors. <i>IEEE Transactions on Nuclear Science</i> , 2010, 57, 2460-2467.	2.0	14
26	Hypersensitivity to Thromboxane Receptor Mediated Cerebral Vasomotion and CBF Oscillations during Acute NO-Deficiency in Rats. <i>PLoS ONE</i> , 2010, 5, e14477.	2.5	13
27	Identification of dental root canals and their medial line from micro-CT and cone-beam CT records. <i>BioMedical Engineering OnLine</i> , 2012, 11, 81.	2.7	13
28	Daily Evolution of Insulin Sensitivity Variability with Respect to Diagnosis in the Critically Ill. <i>PLoS ONE</i> , 2013, 8, e57119.	2.5	13
29	The Design of NFC Based Applications. , 2007, , .		11
30	Robust Blood-Glucose Control using Mathematica. , 2006, 2006, 451-4.		9
31	The StoLPan view of the NFC ecosystem. , 2009, , .		9
32	GPU-based acceleration of the MLEM algorithm for SPECT parallel imaging with attenuation correction and compensation for detector response. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011, 44, 6195-6200.	0.4	9
33	Asymptotic output tracking in blood glucose control. A case study. , 2011, , .		9
34	Stochastic Simulation and Parameter Estimation of the ICING Model**Research is supported by EU FP7 IRSES, Engineering Technology based Innovation in Medicine, Grant No. 318943 and Hungarian National Scientific Research Foundation, Grant No. K116574.. <i>IFAC-PapersOnLine</i> , 2016, 49, 218-223.	0.9	9
35	Information system for road infrastructure booking. <i>Periodica Polytechnica Transportation Engineering</i> , 2011, 39, 55.	1.2	9
36	A Generalized Approach for NFC Application Development. , 2010, , .		8

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37	Reconstructing asynchrony for mechanical ventilation using a hysteresis loop virtual patient model. BioMedical Engineering OnLine, 2022, 21, 16.	2.7	8
38	Business process analysis of NFC-based Services. , 2009, , .		7
39	Stery-hand: A new device to support hand disinfection. , 2010, 2010, 4756-9.		7
40	Modelling intestinal glucose absorption in premature infants using continuous glucose monitoring data. Computer Methods and Programs in Biomedicine, 2019, 171, 41-51.	4.7	7
41	Spatial accuracy of surgical robots. , 2009, , .		6
42	Stochastic approach to error estimation for image-guided robotic systems. , 2010, 2010, 984-7.		6
43	Towards unified electromagnetic tracking system assessment-static errors. , 2011, 2011, 1905-8.		6
44	University life in contactless way - NFC use cases in academic environment. , 2012, , .		6
45	Model-based control algorithms for optimal therapy of high-impact public health diseases. , 2012, , .		6
46	Optimal Tight Glycaemic Control Supported by Differential Geometric Methods. IFMBE Proceedings, 2011, , 351-354.	0.3	6
47	Type 1 Diabetes Regulated by ANFIS at Molecular Levels. IFMBE Proceedings, 2009, , 841-844.	0.3	6
48	Patient monitoring on industry standard fieldbus. , 0, , .		5
49	Detection of the root canal's centerline from dental micro-CT records. , 2009, 2009, 3517-20.		5
50	Application of hybrid c-means clustering models in inhomogeneity compensation and MR brain image segmentation. , 2009, , .		5
51	Building a contactless university examination system using NFC. , 2011, , .		5
52	Repeatable assessment protocol for electromagnetic trackers. Proceedings of SPIE, 2012, , .	0.8	5
53	Specific validation analysis of stochastic ICING model based estimation of insulin sensitivity profile using clinical data. , 2016, , .		5
54	Artificial Intelligence Based Insulin Sensitivity Prediction for Personalized Glycaemic Control in Intensive Care. IFAC-PapersOnLine, 2020, 53, 16335-16340.	0.9	5

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55	Local energy scale map for NanoPET $\hat{a}$ , $\phi$ /CT system. , 2009, , .		4
56	Investigating the Applicability of qALPV Modeling to ICU Models for Glycaemic Control. , 2010, , .		4
57	Time delay compensation by fuzzy control in the case of master-slave telesurgery. , 2011, , .		4
58	Quasi-Model-Based Control of Type 1 Diabetes Mellitus. Journal of Electrical and Computer Engineering, 2011, 2011, 1-12.	0.9	4
59	Altered blood glucose dynamics during and after anhepatic phase of liver transplantation: A model-based approach. , 2013, , .		4
60	Comparison of Model Based and Clinical Blood Glucose Evolution during and after Anhepatic Status. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	4
61	Assessing Respiratory Mechanics of Reverse-Triggered Breathing Cycles - Case Study of Two Mechanically Ventilated Patients. IFAC-PapersOnLine, 2015, 48, 505-510.	0.9	4
62	Estimation of the insulin sensitivity profile for the stochastic variant of the ICING model. , 2016, , .		4
63	Estimating Enhanced Endogenous Glucose Production in Intensive Care Unit Patients with Severe Insulin Resistance. Journal of Diabetes Science and Technology, 2021, , 193229682110182.	2.2	4
64	New Principles and Adequate Robust Control Methods for Artificial Pancreas. Studies in Computational Intelligence, 2010, , 75-86.	0.9	4
65	Iterative Interpolative Pressure Reconstruction for Improved Respiratory Mechanics Estimation During Asynchronous Volume Controlled Ventilation. IFMBE Proceedings, 2016, , 133-139.	0.3	4
66	Biomedical engineering education in Hungary. , 0, , .		3
67	A fully symbolic design and modeling of nonlinear glucose control with Control System Professional Suite (CSPS) of Mathematica. Acta Physiologica Hungarica, 2004, 91, 147-156.	0.9	3
68	Soft computing control of Type 1 diabetes described at molecular levels. , 2009, , .		3
69	Induced L2-norm Minimization of Glucose-Insulin System for Type I Diabetic Patients. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 55-60.	0.4	3
70	Differences in the laboratory parameters of obese and healthy Hungarian children and their use in automatic classification. , 2010, 2010, 3883-6.		3
71	A novel virtual machine based approach for hosting NFC services on mobile devices. , 2010, , .		3
72	Security issues of service installation on a multi application NFC environment. , 2010, , .		3

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73	A novel model-based PET detector block simulation approach. Biomedical Signal Processing and Control, 2011, 6, 27-33.	5.7	3
74	Analysis of Stochastic Noise of Blood-Glucose Dynamics. IFAC-PapersOnLine, 2017, 50, 15157-15162.	0.9	3
75	Modeling and simulation framework of aortic valve for hemodynamic evaluation of aortic root replacement surgery outcomes. IFAC-PapersOnLine, 2018, 51, 258-263.	0.9	3
76	Endogenous glucose production parameter estimation for intensive care patients. , 2019, , .		3
77	In-Silico Analysis of Stochastic Modelling of Human Blood Glucose Regulatory System. , 2019, , .		3
78	The use of multi-energy photon emitters in 3D SPECT reconstruction. Biomedical Signal Processing and Control, 2019, 47, 413-423.	5.7	3
79	Classification of Time Series Using Singular Values and Wavelet Subband Analysis with ANN and SVM Classifiers. Journal of Advanced Computational Intelligence and Intelligent Informatics, 2006, 10, 498-503.	0.9	3
80	CHARACTERIZATION OF CEREBRAL BLOOD FLOW OSCILLATIONS USING DIFFERENT CLASSIFICATION METHODS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 214-219.	0.4	2
81	Reconstruction of myocardial short-scan SPECT images. , 0, , .		2
82	Surgical Case Identification for an Image-Guided Interventional System. , 2010, , .		2
83	ANFIS regulated type 1diabetic model for different glucose absorption scenarios. , 2010, , .		2
84	Robust control techniques and its graphical representation in case of Type I diabetes using Mathematica. , 2010, , .		2
85	Robust Tight Glycaemic Control of ICU patients. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 4995-5000.	0.4	2
86	A Direct Method for Reconstructing Dynamic SPECT Images. IFAC-PapersOnLine, 2017, 50, 15139-15144.	0.9	2
87	Effectiveness of Parameters in Quantifying Root Canal Morphology Change after Instrumentation with the Aid of a Microcomputed Tomography. BioMed Research International, 2019, 2019, 1-6.	1.9	2
88	Filtering and contrast enhancement on subtracted direct digital angiograms. , 2004, 2004, 1533-6.		1
89	Characterization of the temporal pattern of cerebral blood flow oscillations. , 0, , .		1
90	A novel model and an environment for PET detector block simulation. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 304-308.	0.4	1

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91	Robust control of type 1 diabetes using $\hat{I}_{1/4}$ -synthesis. , 2010, , .		1
92	Timing calibration method for NanoPET&#x2122;/CT system. , 2010, , .		1
93	Quasi Model Based Optimal Control of Type 1 Diabetes Mellitus*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 5012-5017.	0.4	1
94	Model-based estimation of physiological parameters in the reperfusion phase of liver transplantation. , 2014, , .		1
95	Modelling Intestinal Glucose Absorption using Continuous Glucose Monitor Data. IFAC-PapersOnLine, 2015, 48, 118-123.	0.9	1
96	Investigation of 3D SPECT Reconstruction with Multi-energy Photon Emitters—â—This work was supported by the Hungarian Scientific Research Fund (OTKA), Grants No. T80316 and K82066; and EU FP7 IRSES Engineering Technology-based Innovation in Medicine, Grant No.318943.. IFAC-PapersOnLine, 2015, 48, 30-35.	0.9	1
97	Generalizability of a Nonlinear Model-based Glycemic Controller. IFAC-PapersOnLine, 2016, 49, 212-217.	0.9	1
98	Safe and secure implementation of the global platform conform infrastructure supporting the customer centric model based ecosystem. , 2016, , .		1
99	Unsupervised Classification based Analysis of the Temporal Pattern of Insulin Sensitivity and Modelling Noise of Patient Groups under Tight Glycemic Control. IFAC-PapersOnLine, 2018, 51, 62-67.	0.9	1
100	Initial value selection of the model parameters in the curve fitting phase of the dynamic SPECT imaging. IFAC-PapersOnLine, 2018, 51, 241-246.	0.9	1
101	Extension of a Glycaemic Control Medical Application with New Functions and Ergonomic User Interface Elements. , 2018, , .		1
102	Editorial: Special Section on Biological Medical Systems. Annual Reviews in Control, 2019, 48, 357-358.	7.9	1
103	Clinical application scenarios to handle insulin resistance and high endogenous glucose production for intensive care patients. IFAC-PapersOnLine, 2020, 53, 16299-16304.	0.9	1
104	In search of the nature of specific nucleic acid-protein interactions. Acta Physiologica Hungarica, 2005, 92, 1-10.	0.9	1
105	Robust Blood-Glucose Control of Type I Diabetes Patients Under Intensive Care Using Mathematica. , 2008, , 1210-1219.		1
106	Behavior Analysis of Sex based Cohorts Using the Toolset of Artificial Intelligence Based Insulin Sensitivity Prediction Methods. IFAC-PapersOnLine, 2021, 54, 352-357.	0.9	1
107	Identification of Asynchronous Effect via Pressure-Volume Loop Reconstruction in Mechanically Ventilated Breathing Waveforms. IFAC-PapersOnLine, 2021, 54, 186-191.	0.9	1
108	EIT Based Time Constant Analysis to Determine Different Types of Patients in COVID-19 Pneumonia. IFMBE Proceedings, 2021, , 462-469.	0.3	1

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109	Detection of Different COVID-19 Pneumonia Phenotypes with Estimated Alveolar Collapse and Overdistention by Bedside Electrical Impedance Tomography. IFAC-PapersOnLine, 2021, 54, 269-274.	0.9	1
110	Electrical Impedance Tomography might be a Practical Tool to Provide Information about COVID-19 Pneumonia Progression. Current Directions in Biomedical Engineering, 2021, 7, 276-278.	0.4	1
111	Computer analysis of physiological systems. , 0, , .		0
112	Using self-diagnosis to adapt organizational structures. , 0, , .		0
113	Biomedical engineering education and research activity in Hungary. , 0, , .		0
114	Biomedical engineering education and related research activity in Hungary. , 0, , .		0
115	Novel communication services based on ENUM technology. , 0, , .		0
116	Classification of time series using singular values and wavelet subband analysis with ANN and SVM classifiers. , 0, , .		0
117	Adaptation and learning in software agents. , 0, , .		0
118	MEDICAL IMAGE SEGMENTATION TECHNIQUES FOR VIRTUAL ENDOSCOPY. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 243-248.	0.4	0
119	Application of Hybrid c-Means Clustering Models in Inhomogeneity Compensation and MR Brain Image Segmentation. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 204-209.	0.4	0
120	Machine assisted histogram classification. Journal of Physics: Conference Series, 2010, 219, 022033.	0.4	0
121	A skeletal approach to root canal centreline detection from dental micro-ct records. , 2010, , .		0
122	FPGA-based BLAST prefiltering. , 2010, , .		0
123	Acceleration of a model based scatter correction technique for Positron Emission Tomography using high performance computing technique. , 2010, , .		0
124	Modeling and control aspects of long distance telesurgical applications. , 2010, , .		0
125	Video based urban traffic analysis in signalized intersections. , 2011, , .		0
126	Services, Use Cases and Future Challenges for Near Field Communication: the StoLPaN Project. , 2011, , .		0

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127	Identification of the Dental Root Canal from Micro-CT Records Using 3D Curve Skeleton Extraction. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 6184-6189.	0.4	0
128	Nonlinear Control Analysis of an ICU Model for Tight Glycaemic Control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 1739-1744.	0.4	0
129	Ubiquitous Tracking in the Medical Environment. Procedia Computer Science, 2011, 7, 325-326.	2.0	0
130	An image-guided tool to prevent hospital acquired infections. Proceedings of SPIE, 2011, , .	0.8	0
131	Optimal scanning protocol for 180° data acquisition in parallel SPECT imaging. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 12-17.	0.4	0
132	Identification of the Root Canal and Its Centreline from Dental Cone Beam CT Records. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1-5.	0.4	0
133	Effect of Diagnosis on Variability of ICU Patients in Insulin Sensitivity. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 462-466.	0.4	0
134	Model based analysis of cerebrovascular oscillation using the system Circle of Willis. , 2012, , .		0
135	Event-based patient motion detection and compensation in image-guided robotics. , 2012, , .		0
136	Optimization of an iterative SPECT reconstruction algorithm utilizing a partial volume effect correction method. , 2013, , .		0
137	Optical simulation environment with accurate gamma photon penetration model for PET detector blocks. , 2013, , .		0
138	Practical estimation method of the optimal scanning protocol for 180° data acquisition in parallel SPECT imaging. Biomedical Signal Processing and Control, 2014, 12, 19-27.	5.7	0
139	Effect of detector blurring on apical region in myocardial perfusion SPECT imaging. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 3593-3598.	0.4	0
140	Variability of Model based Insulin Sensitivity in Liver Transplanted Patients. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 11595-11598.	0.4	0
141	An eigen-analysis of the relationships between model structure, discrete data, measurement error and resulting parameter identification distributions. IFAC-PapersOnLine, 2015, 48, 88-93.	0.9	0
142	The effects of ICU specific nutrition management, as a human factor by using Stochastic Targeted glycaemic control**Research is supported by EU FP7 IRSES, Engineering Technology based Innovation in Medicine, Grant No. 318943 and Hungarian National Scientific Research Foundation, Grant No. KI 16574. Finally author Stewart was supported by a UC Doctoral Scholarship.. IFAC-PapersOnLine, 2016, 49, 236-242.	0.9	0
143	Blood glucose model for liver transplantation: Alteration of physiological parameters. , 2016, , .		0
144	Intelligent Assisting Tools for Endodontic Treatment. , 2019, , .		0

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145	Higher Dimensional Insulin Sensitivity Prediction in Intensive Care. , 2021, , .		0
146	Medial Axis Detection from Dental Micro-CT Records. IFMBE Proceedings, 2009, , 1688-1691.	0.3	0
147	Using Support Vector Machines to Recognize Changes Characteristic to Obesity in Laboratory Results. IFMBE Proceedings, 2011, , 215-218.	0.3	0
148	Identification of the Root Canal from Dental Micro-CT Records. Lecture Notes in Computer Science, 2011, , 339-346.	1.3	0
149	Improved Respiratory Mechanical Estimation During Pressure Controlled Mechanical Ventilation. IFMBE Proceedings, 2016, , 144-149.	0.3	0
150	Realistic Kidney Simulation for the Development of Renal Function Diagnostics by Dynamic SPECT Imaging. IFAC-PapersOnLine, 2021, 54, 275-280.	0.9	0
151	Finite Element Simulation Based Analysis of Valve-sparing Aortic Root Surgery. IFAC-PapersOnLine, 2020, 53, 16037-16042.	0.9	0