

Predrag Bakic

List of Publications by Year in descending order

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156
papers

1,772
citations

393982

19
h-index

344852

36
g-index

161
all docs

161
docs citations

161
times ranked

859
citing authors

#	ARTICLE	IF	CITATIONS
1	Mammogram synthesis using a 3D simulation. I. Breast tissue model and image acquisition simulation. Medical Physics, 2002, 29, 2131-2139.	1.6	122
2	Optimized generation of high resolution breast anthropomorphic software phantoms. Medical Physics, 2012, 39, 2290-2302.	1.6	97
3	Development and characterization of an anthropomorphic breast software phantom based upon region-growing algorithm. Medical Physics, 2011, 38, 3165-3176.	1.6	95
4	Development of a physical 3D anthropomorphic breast phantom. Medical Physics, 2011, 38, 891-896.	1.6	90
5	Parenchymal Texture Analysis in Digital Breast Tomosynthesis for Breast Cancer Risk Estimation. Academic Radiology, 2009, 16, 283-298.	1.3	71
6	Mammogram synthesis using a 3D simulation. II. Evaluation of synthetic mammogram texture. Medical Physics, 2002, 29, 2140-2151.	1.6	68
7	Breast dosimetry using high-resolution voxel phantoms. Radiation Protection Dosimetry, 2005, 114, 359-363.	0.4	63
8	Breast Percent Density: Estimation on Digital Mammograms and Central Tomosynthesis Projections. Radiology, 2009, 252, 40-49.	3.6	58
9	A virtual trial framework for quantifying the detectability of masses in breast tomosynthesis projection data. Medical Physics, 2013, 40, 051914.	1.6	56
10	Mammogram synthesis using a three-dimensional simulation. III. Modeling and evaluation of the breast ductal network. Medical Physics, 2003, 30, 1914-1925.	1.6	54
11	Analysis of Parenchymal Texture with Digital Breast Tomosynthesis: Comparison with Digital Mammography and Implications for Cancer Risk Assessment. Radiology, 2011, 261, 80-91.	3.6	53
12	Evaluating the sensitivity of the optimization of acquisition geometry to the choice of reconstruction algorithm in digital breast tomosynthesis through a simulation study. Physics in Medicine and Biology, 2015, 60, 1259-1288.	1.6	41
13	A statistically defined anthropomorphic software breast phantom. Medical Physics, 2012, 39, 3375-3385.	1.6	39
14	OpenVCT: a GPU-accelerated virtual clinical trial pipeline for mammography and digital breast tomosynthesis. , 2018, , .		38
15	A Representation and Classification Scheme for Tree-Like Structures in Medical Images: Analyzing the Branching Pattern of Ductal Trees in X-ray Galactograms. IEEE Transactions on Medical Imaging, 2009, 28, 487-493.	5.4	30
16	Dynamic reconstruction and rendering of 3D tomosynthesis images. Proceedings of SPIE, 2011, , .	0.8	27
17	Classification of Galactograms with Ramification Matrices. Academic Radiology, 2003, 10, 198-204.	1.3	24
18	Virtual clinical trial of lesion detection in digital mammography and digital breast tomosynthesis. , 2018, , .		23

#	ARTICLE	IF	CITATIONS
19	VIRTUAL CLINICAL TRIALS IN MEDICAL IMAGING SYSTEM EVALUATION AND OPTIMISATION. Radiation Protection Dosimetry, 2021, 195, 363-371.	0.4	22
20	Mammogram registration: a phantom-based evaluation of compressed Breast Thickness variation effects. IEEE Transactions on Medical Imaging, 2006, 25, 188-197.	5.4	21
21	Effects of quantum noise and binocular summation on dose requirements in stereoradiography. Medical Physics, 2003, 30, 3061-3071.	1.6	20
22	Calculation of the properties of digital mammograms using a computer simulation. Radiation Protection Dosimetry, 2005, 114, 395-398.	0.4	20
23	Development of an anthropomorphic breast software phantom based on region growing algorithm. , 2008, , .		20
24	Method for Simulating Dose Reduction in Digital Breast Tomosynthesis. IEEE Transactions on Medical Imaging, 2017, 36, 2331-2342.	5.4	20
25	Deep learning reconstruction of digital breast tomosynthesis images for accurate breast density and patient-specific radiation dose estimation. Medical Image Analysis, 2021, 71, 102061.	7.0	19
26	Mammographic image classification using histogram intersection. , 2010, , .		17
27	Method for simulating dose reduction in digital mammography using the Anscombe transformation. Medical Physics, 2016, 43, 2704-2714.	1.6	17
28	Estimating breast tomosynthesis performance in detection tasks with variable-background phantoms. Proceedings of SPIE, 2009, , .	0.8	16
29	Description and Characterization of a Novel Method for Partial Volume Simulation in Software Breast Phantoms. IEEE Transactions on Medical Imaging, 2015, 34, 2146-2161.	5.4	16
30	Restoration of low-dose digital breast tomosynthesis. Measurement Science and Technology, 2018, 29, 064003.	1.4	14
31	Under-exploration of Three-Dimensional Images Leads to Search Errors for Small Salient Targets. Current Biology, 2021, 31, 1099-1106.e5.	1.8	14
32	Development of a 3D high-resolution physical anthropomorphic breast phantom. Proceedings of SPIE, 2010, , .	0.8	13
33	Evaluation of a novel method of noise reduction using computer-simulated mammograms. Radiation Protection Dosimetry, 2005, 114, 81-84.	0.4	12
34	Computational Breast Anatomy Simulation Using Multi-Scale Perlin Noise. IEEE Transactions on Medical Imaging, 2021, 40, 3436-3445.	5.4	12
35	Realistic Simulation of Breast Tissue Microstructure in Software Anthropomorphic Phantoms. Lecture Notes in Computer Science, 2014, , 348-355.	1.0	12
36	Filtering of Poisson Noise in Digital Mammography Using Local Statistics and Adaptive Wiener Filter. Lecture Notes in Computer Science, 2012, , 268-275.	1.0	12

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37	Interactions of lesion detectability and size across single-slice DBT and 3D DBT. , 2018, 10577, .		11
38	Aliasing effects in digital images of line-pair phantoms. Medical Physics, 2002, 29, 1716-1718.	1.6	10
39	Simulation of tomosynthesis images based on an anthropomorphic software breast tissue phantom. Proceedings of SPIE, 2008, , .	0.8	10
40	Effect of denoising on the quality of reconstructed images in digital breast tomosynthesis. , 2013, , .		10
41	A fast scatter field estimator for digital breast tomosynthesis. , 2012, , .		9
42	Integration of spatio-temporal contrast sensitivity with a multi-slice channelized Hotelling observer. , 2013, , .		9
43	Technical Note: Noise models for virtual clinical trials of digital breast tomosynthesis. Medical Physics, 2019, 46, 2683-2689.	1.6	9
44	Power Spectrum Analysis of an Anthropomorphic Breast Phantom Compared to Patient Data in 2D Digital Mammography and Breast Tomosynthesis. Lecture Notes in Computer Science, 2014, , 423-429.	1.0	9
45	Virtual Tools for the Evaluation of Breast Imaging: State-of-the Science and Future Directions. Lecture Notes in Computer Science, 2016, , 518-524.	1.0	9
46	A comparative study of volumetric breast density estimation in digital mammography and magnetic resonance imaging: results from a high-risk population. Proceedings of SPIE, 2010, , .	0.8	8
47	Pipeline for effective denoising of digital mammography and digital breast tomosynthesis. Proceedings of SPIE, 2017, , .	0.8	8
48	Evaluating the Effect of Tomosynthesis Acquisition Parameters on Image Texture: A Study Based on an Anthropomorphic Breast Tissue Software Model. Lecture Notes in Computer Science, 2008, , 491-498.	1.0	8
49	A Comparative Study of Volumetric and Area-Based Breast Density Estimation in Digital Mammography: Results from a Screening Population. Lecture Notes in Computer Science, 2010, , 378-385.	1.0	8
50	Analysis of Geometric Accuracy in Digital Breast Tomosynthesis Reconstruction. Lecture Notes in Computer Science, 2010, , 62-69.	1.0	8
51	Evaluation of non-Gaussian statistical properties in virtual breast phantoms. Journal of Medical Imaging, 2019, 6, 1.	0.8	8
52	Experimental Evaluation of Physical Breast Phantoms for 2D and 3D Breast X-Ray Imaging Techniques. IFMBE Proceedings, 2021, , 544-552.	0.2	8
53	Computer simulations of case difficulty in digital breast tomosynthesis using virtual clinical trials. Medical Physics, 2022, 49, 2220-2232.	1.6	8
54	Analysis of parenchymal texture properties in breast tomosynthesis images. , 2007, , .		7

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55	Validation and optimization of digital breast tomosynthesis reconstruction using an anthropomorphic software breast phantom. , 2010, , .		7
56	Roadmap for efficient parallelization of breast anatomy simulation. , 2012, , .		7
57	Performance analysis of EM-MPM and K-means clustering in 3D ultrasound image segmentation. , 2012, , .		7
58	A Comparative Study of the Inter-reader Variability of Breast Percent Density Estimation in Digital Mammography: Potential Effect of Reader’s Training and Clinical Experience. Lecture Notes in Computer Science, 2010, , 114-120.	1.0	7
59	An Anthropomorphic Software Breast Phantom for Tomosynthesis Simulation: Power Spectrum Analysis of Phantom Projections. Lecture Notes in Computer Science, 2010, , 452-458.	1.0	7
60	Analysis of volume overestimation artifacts in the breast outline segmentation in tomosynthesis. , 2018, , .		7
61	A representation and classification scheme for tree-like structures in medical images: an application on branching pattern analysis of ductal trees in x-ray galactograms. , 2006, , .		6
62	Comparison of 3D and 2D breast density estimation from synthetic ultrasound tomography images and digital mammograms of anthropomorphic software breast phantoms. Proceedings of SPIE, 2011, , .	0.8	6
63	Non-Gaussian statistical properties of virtual breast phantoms. Proceedings of SPIE, 2014, , .	0.8	6
64	Development and evaluation of a 3D model observer with nonlinear spatiotemporal contrast sensitivity. Proceedings of SPIE, 2014, , .	0.8	6
65	Application of the fractal Perlin noise algorithm for the generation of simulated breast tissue. Proceedings of SPIE, 2015, , .	0.8	6
66	Is the Outcome of Optimizing the System Acquisition Parameters Sensitive to the Reconstruction Algorithm in Digital Breast Tomosynthesis?. Lecture Notes in Computer Science, 2012, , 346-353.	1.0	6
67	Optimized simulation of breast anatomy for virtual clinical trials. , 2018, , .		6
68	Multiple-reader, multiple-case ROC analysis for determining the limit of calcification detection in tomosynthesis. , 2019, , .		6
69	Analyzing tree-shape anatomical structures using topological descriptors of branching and ensemble of classifiers. Journal of Theoretical and Applied Computer Science, 2013, 7, 3-19.	1.0	6
70	Analysis of texture patterns in medical images with an application to breast imaging. , 2007, , .		5
71	Texture in digital breast tomosynthesis: a comparison between mammographic and tomographic characterization of parenchymal properties. , 2008, , .		5
72	Spatial distribution of adipose compartments size, shape and orientation in a CT breast image of a mastectomy specimen. , 2015, , .		5

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73	Registration of Mammograms and Breast Tomosynthesis Images. Lecture Notes in Computer Science, 2006, , 498-503.	1.0	5
74	Digital Breast Tomosynthesis Parenchymal Texture Analysis for Breast Cancer Risk Estimation: A Preliminary Study. Lecture Notes in Computer Science, 2008, , 681-688.	1.0	5
75	Developing populations of software breast phantoms for virtual clinical trials. , 2018, , .		5
76	Foveated model observer to predict human search performance on virtual digital breast tomosynthesis phantoms. , 2020, , .		5
77	Analyzing Tree-Like Structures in Biomedical Images Based on Texture and Branching: An Application to Breast Imaging. Lecture Notes in Computer Science, 2008, , 25-32.	1.0	5
78	Partial volume simulation in software breast phantoms. Proceedings of SPIE, 2012, , .	0.8	4
79	Testing realism of software breast phantoms: texture analysis of synthetic mammograms. , 2013, , .		4
80	Asymptotic number of Z^3 cells covering C	1.4	4
81	Feasibility study of dose reduction in digital breast tomosynthesis using non-local denoising algorithms. Proceedings of SPIE, 2015, , .	0.8	4
82	Estimation of adipose compartment volumes in CT images of a mastectomy specimen. Proceedings of SPIE, 2016, , .	0.8	4
83	Metal artifact reduction using a patch-based reconstruction for digital breast tomosynthesis. Proceedings of SPIE, 2017, , .	0.8	4
84	Non-rigid Registration of Mammograms Obtained with Variable Breast Compression: A Phantom Study. Lecture Notes in Computer Science, 2003, , 281-290.	1.0	4
85	Breast tissue classification in digital breast tomosynthesis images using texture features: a feasibility study. Proceedings of SPIE, 2009, , .	0.8	3
86	Learning-Based Vessel Segmentation in Mammographic Images. , 2011, , .		3
87	Segmentation of anatomical branching structures based on texture features and graph cut. , 2011, , .		3
88	Shape analysis of simulated breast anatomical structures. , 2012, , .		3
89	Two methods for simulation of dense tissue distribution in software breast phantoms. , 2013, , .		3
90	Validation of no-reference image quality index for the assessment of digital mammographic images. Proceedings of SPIE, 2016, , .	0.8	3

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91	Computer simulation of the breast subcutaneous and retromammary tissue for use in virtual clinical trials. Proceedings of SPIE, 2017, , .	0.8	3
92	Spatially localized sparse representations for breast lesion characterization. Computers in Biology and Medicine, 2020, 123, 103914.	3.9	3
93	A Directional Small-Scale Tissue Model for an Anthropomorphic Breast Phantom. Lecture Notes in Computer Science, 2012, , 141-148.	1.0	3
94	A Modelling Framework for Evaluation of 2D-Mammography and Breast Tomosynthesis Systems. Lecture Notes in Computer Science, 2012, , 338-345.	1.0	3
95	Performance Tradeoffs in a Model Breast Tomosynthesis System. , 2010, , .		3
96	Simulation of Three Material Partial Volume Averaging in a Software Breast Phantom. Lecture Notes in Computer Science, 2012, , 149-156.	1.0	3
97	Determining the optimal angular range of the X-ray source motion in tomosynthesis using virtual clinical trials. , 2020, , .		3
98	<title>Dose requirements in stereoradiography</title>. , 2002, 4682, 126.		2
99	Testing a wavelet based noise reduction method using computer-simulated mammograms. , 2005, 5745, 969.		2
100	Comparison of breast ductal branching pattern classification using x-ray galactograms and MR autogalactograms. , 2006, , .		2
101	Analysis of percent density estimates from digital breast tomosynthesis projection images. , 2007, , .		2
102	Breast percent density estimation from 3D reconstructed digital breast tomosynthesis images. , 2008, , .		2
103	Probabilistic branching node detection using AdaBoost and hybrid local features. , 2010, , .		2
104	Automatic insertion of simulated microcalcification clusters in a software breast phantom. Proceedings of SPIE, 2014, , .	0.8	2
105	Optimization of the simulation parameters for improving realism in anthropomorphic breast phantoms. , 2017, , .		2
106	High-attenuation artifact reduction in breast tomosynthesis using a novel reconstruction algorithm. European Journal of Radiology, 2019, 116, 21-26.	1.2	2
107	It Is Hard to See a Needle in a Haystack: Modeling Contrast Masking Effect in a Numerical Observer. Lecture Notes in Computer Science, 2014, , 723-730.	1.0	2
108	Simulation of Breast Anatomy: Bridging the Radiology-Pathology Scale Gap. Lecture Notes in Computer Science, 2016, , 478-485.	1.0	2

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109	Effects of Medical Display Luminance, Contrast and Temporal Compensation on CHO Detection Performance at Various Browsing Speeds and on Digital Breast Tomosynthesis Images. Lecture Notes in Computer Science, 2012, , 292-299.	1.0	2
110	Classifying Ductal Trees Using Geometrical Features and Ensemble Learning Techniques. Communications in Computer and Information Science, 2013, , 146-155.	0.4	2
111	Evaluation of Breast Ductal Networks Using Ramification Matrices. , 2003, , 249-252.		2
112	MPMC ROC analysis of calcification detection in tomosynthesis using computed super resolution and virtual clinical trials. , 2020, , .		2
113	Finite element model of mechanical imaging of the breast. Journal of Medical Imaging, 2022, 9, .	0.8	2
114	Development and evaluation of a method for tumor growth simulation in virtual clinical trials of breast cancer screening. Journal of Medical Imaging, 2022, 9, .	0.8	2
115	2-AFC observer study of digital stereomammography. , 2003, 5034, 1.		1
116	2-AFC observer study of shape and contrast discrimination in digital stereomammography. , 2004, 5372, 62.		1
117	Probabilistic branching node detection using hybrid local features. , 2009, , .		1
118	Automatic detection of regions of interest in mammographic images. Proceedings of SPIE, 2011, , .	0.8	1
119	Exploring the relationship between SDNR and detectability in dual-energy breast x-ray imaging. , 2013, , .		1
120	Proposing a new velocity profile for continuous x-ray tube motion in digital breast tomosynthesis. , 2013, , .		1
121	Use of Wavelet Multiresolution Analysis to Reduce Radiation Dose in Digital Mammography. , 2015, , .		1
122	Reduction of artifacts in computer simulation of breast Cooper's ligaments. Proceedings of SPIE, 2016, , .	0.8	1
123	Assessment of automatic exposure control performance in digital mammography using a no-reference anisotropic quality index. Proceedings of SPIE, 2017, , .	0.8	1
124	Simulation of Dose Reduction in Digital Breast Tomosynthesis. Lecture Notes in Computer Science, 2016, , 343-350.	1.0	1
125	Characterization of adipose compartments in mastectomy CT images. , 2018, , .		1
126	Restored low-dose digital breast tomosynthesis: a perception study. , 2018, , .		1

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127	Simulation of sequential pathology images for the virtual clinical trials with rad-path correlation. , 2018, , .		1
128	Identifying and modelling clinical subpopulations from the MalmÅŕ breast tomosynthesis screening trial. , 2020, , .		1
129	Evaluation of a flat fielding method for simultaneous DBT and MI acquisition. , 2020, , .		1
130	Evaluation of convolutional neural networks for search in 1/f2.8 filtered noise and digital breast tomosynthesis phantoms. , 2020, 11316, .		1
131	Virtual clinical trial of simultaneous digital breast tomosynthesis and mechanical imaging: model calibration and the effect of tumor depth. , 2022, , .		1
132	Establishing correspondence in mammograms and tomosynthesis projections. , 2007, , .		0
133	Segmentation of anatomical branching structures based on texture features and conditional random field. Proceedings of SPIE, 2012, , .	0.8	0
134	Breast image registration by using non-linear local affine transformation. Proceedings of SPIE, 2013, , .	0.8	0
135	Monte Carlo testing and verification of numerical algorithm implementations. , 2015, , .		0
136	Observer study to evaluate the simulation of mammographic calcification clusters. Proceedings of SPIE, 2016, , .	0.8	0
137	Validation of Cooper's ligament thickness in software breast phantoms. , 2017, , .		0
138	A comparison of methods to evaluate gray scale response of tomosynthesis systems using a software breast phantom. , 2017, , .		0
139	Classifying Ductal Tree Structures Using Topological Descriptors of Branching. International Federation for Information Processing, 2011, , 455-463.	0.4	0
140	Detecting and Localizing Tree Nodes in Anatomic Structures of Branching Topology. Lecture Notes in Computer Science, 2013, , 485-493.	1.0	0
141	Correlation between Topological Descriptors of the Breast Ductal Network from Clinical Galactograms and Texture Features of Corresponding Mammograms. Lecture Notes in Computer Science, 2014, , 658-665.	1.0	0
142	Improved simulation of Cooper ligaments in breast phantoms. , 2018, , .		0
143	Application of neural networks to model the signal-dependent noise of a digital breast tomosynthesis unit. , 2018, , .		0
144	Artifact reduction in simultaneous tomosynthesis and mechanical imaging of the breast. , 2019, , .		0

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145	Simulation pipeline for virtual clinical trials of dermatology images. , 2019, , .		0
146	Noise measurements from reconstructed digital breast tomosynthesis. , 2019, , .		0
147	Three-dimensional modeling of microcalcification clusters using breast tomosynthesis: a preliminary study. , 2020, , .		0
148	Artificial intelligence together with mechanical imaging in mammography. , 2020, , .		0
149	Calculation of radiomic features to validate the textural realism of physical anthropomorphic phantoms for digital mammography. , 2020, , .		0
150	Pre-processing for image quality improvement in simultaneous DBT and mechanical imaging. , 2020, , .		0
151	Impact of chromophores on colour appearance in a computational skin model. , 2020, , .		0
152	Evaluation of 3D Breast Surface Reconstruction Accuracy Using Non-contact Scanner Images: A Phantom Study. Lecture Notes in Computer Science, 2008, , 585-592.	1.0	0
153	Comparison of Breast Percent Density Estimated from Digital Mammograms and Central Reconstructed Tomosynthesis Slice Images. Lecture Notes in Computer Science, 2008, , 674-680.	1.0	0
154	Simulation of volumetric breast densities for virtual clinical trials. , 2022, , .		0
155	Novel Perlin-based phantoms using 3D models of compressed breast shapes and fractal noise. , 2022, , .		0
156	Simulation of mid-thigh anatomy for virtual clinical studies. , 2022, , .		0