

# 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	Computer simulations of case difficulty in digital breast tomosynthesis using virtual clinical trials. <i>Medical Physics</i> , 2022, 49, 2220-2232.	1.6	8
2	Simulation of volumetric breast densities for virtual clinical trials. , 2022, , .		0
3	Novel Perlin-based phantoms using 3D models of compressed breast shapes and fractal noise. , 2022, , .		0
4	Simulation of mid-thigh anatomy for virtual clinical studies. , 2022, , .		0
5	Virtual clinical trial of simultaneous digital breast tomosynthesis and mechanical imaging: model calibration and the effect of tumor depth. , 2022, , .		1
6	Finite element model of mechanical imaging of the breast. <i>Journal of Medical Imaging</i> , 2022, 9, .	0.8	2
7	Development and evaluation of a method for tumor growth simulation in virtual clinical trials of breast cancer screening. <i>Journal of Medical Imaging</i> , 2022, 9, .	0.8	2
8	Under-exploration of Three-Dimensional Images Leads to Search Errors for Small Salient Targets. <i>Current Biology</i> , 2021, 31, 1099-1106.e5.	1.8	14
9	VIRTUAL CLINICAL TRIALS IN MEDICAL IMAGING SYSTEM EVALUATION AND OPTIMISATION. <i>Radiation Protection Dosimetry</i> , 2021, 195, 363-371.	0.4	22
10	Deep learning reconstruction of digital breast tomosynthesis images for accurate breast density and patient-specific radiation dose estimation. <i>Medical Image Analysis</i> , 2021, 71, 102061.	7.0	19
11	Computational Breast Anatomy Simulation Using Multi-Scale Perlin Noise. <i>IEEE Transactions on Medical Imaging</i> , 2021, 40, 3436-3445.	5.4	12
12	Experimental Evaluation of Physical Breast Phantoms for 2D and 3D Breast X-Ray Imaging Techniques. <i>IFMBE Proceedings</i> , 2021, , 544-552.	0.2	8
13	Spatially localized sparse representations for breast lesion characterization. <i>Computers in Biology and Medicine</i> , 2020, 123, 103914.	3.9	3
14	Three-dimensional modeling of microcalcification clusters using breast tomosynthesis: a preliminary study. , 2020, , .		0
15	Identifying and modelling clinical subpopulations from the Malmö breast tomosynthesis screening trial. , 2020, , .		1
16	MRMC ROC analysis of calcification detection in tomosynthesis using computed super resolution and virtual clinical trials. , 2020, , .		2
17	Evaluation of a flat fielding method for simultaneous DBT and MI acquisition. , 2020, , .		1
18	Artificial intelligence together with mechanical imaging in mammography. , 2020, , .		0

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19	Calculation of radiomic features to validate the textural realism of physical anthropomorphic phantoms for digital mammography. , 2020, , .		0
20	Pre-processing for image quality improvement in simultaneous DBT and mechanical imaging. , 2020, , .		0
21	Impact of chromophores on colour appearance in a computational skin model. , 2020, , .		0
22	Determining the optimal angular range of the X-ray source motion in tomosynthesis using virtual clinical trials. , 2020, , .		3
23	Evaluation of convolutional neural networks for search in 1/f <sup>2.8</sup> filtered noise and digital breast tomosynthesis phantoms. , 2020, 11316, .		1
24	Foveated model observer to predict human search performance on virtual digital breast tomosynthesis phantoms. , 2020, , .		5
25	High-attenuation artifact reduction in breast tomosynthesis using a novel reconstruction algorithm. European Journal of Radiology, 2019, 116, 21-26.	1.2	2
26	Technical Note: Noise models for virtual clinical trials of digital breast tomosynthesis. Medical Physics, 2019, 46, 2683-2689.	1.6	9
27	Artifact reduction in simultaneous tomosynthesis and mechanical imaging of the breast. , 2019, , .		0
28	Simulation pipeline for virtual clinical trials of dermatology images. , 2019, , .		0
29	Noise measurements from reconstructed digital breast tomosynthesis. , 2019, , .		0
30	Multiple-reader, multiple-case ROC analysis for determining the limit of calcification detection in tomosynthesis. , 2019, , .		6
31	Evaluation of non-Gaussian statistical properties in virtual breast phantoms. Journal of Medical Imaging, 2019, 6, 1.	0.8	8
32	Restoration of low-dose digital breast tomosynthesis. Measurement Science and Technology, 2018, 29, 064003.	1.4	14
33	Analysis of volume overestimation artifacts in the breast outline segmentation in tomosynthesis. , 2018, , .		7
34	Interactions of lesion detectability and size across single-slice DBT and 3D DBT. , 2018, 10577, .		11
35	Virtual clinical trial of lesion detection in digital mammography and digital breast tomosynthesis. , 2018, , .		23
36	OpenVCT: a GPU-accelerated virtual clinical trial pipeline for mammography and digital breast tomosynthesis. , 2018, , .		38

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37	Characterization of adipose compartments in mastectomy CT images. , 2018, , .		1
38	Improved simulation of Cooper ligaments in breast phantoms. , 2018, , .		0
39	Restored low-dose digital breast tomosynthesis: a perception study. , 2018, , .		1
40	Application of neural networks to model the signal-dependent noise of a digital breast tomosynthesis unit. , 2018, , .		0
41	Developing populations of software breast phantoms for virtual clinical trials. , 2018, , .		5
42	Optimized simulation of breast anatomy for virtual clinical trials. , 2018, , .		6
43	Simulation of sequential pathology images for the virtual clinical trials with rad-path correlation. , 2018, , .		1
44	Metal artifact reduction using a patch-based reconstruction for digital breast tomosynthesis. Proceedings of SPIE, 2017, , .	0.8	4
45	Pipeline for effective denoising of digital mammography and digital breast tomosynthesis. Proceedings of SPIE, 2017, , .	0.8	8
46	Optimization of the simulation parameters for improving realism in anthropomorphic breast phantoms. , 2017, , .		2
47	Validation of Cooper's ligament thickness in software breast phantoms. , 2017, , .		0
48	Computer simulation of the breast subcutaneous and retromammary tissue for use in virtual clinical trials. Proceedings of SPIE, 2017, , .	0.8	3
49	A comparison of methods to evaluate gray scale response of tomosynthesis systems using a software breast phantom. , 2017, , .		0
50	Method for Simulating Dose Reduction in Digital Breast Tomosynthesis. IEEE Transactions on Medical Imaging, 2017, 36, 2331-2342.	5.4	20
51	Assessment of automatic exposure control performance in digital mammography using a no-reference anisotropic quality index. Proceedings of SPIE, 2017, , .	0.8	1
52	Observer study to evaluate the simulation of mammographic calcification clusters. Proceedings of SPIE, 2016, , .	0.8	0
53	Method for simulating dose reduction in digital mammography using the Anscombe transformation. Medical Physics, 2016, 43, 2704-2714.	1.6	17
54	Estimation of adipose compartment volumes in CT images of a mastectomy specimen. Proceedings of SPIE, 2016, , .	0.8	4

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55	Validation of no-reference image quality index for the assessment of digital mammographic images. Proceedings of SPIE, 2016, , .	0.8	3
56	Reduction of artifacts in computer simulation of breast Cooper's ligaments. Proceedings of SPIE, 2016, , .	0.8	1
57	Simulation of Breast Anatomy: Bridging the Radiology-Pathology Scale Gap. Lecture Notes in Computer Science, 2016, , 478-485.	1.0	2
58	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
59	Simulation of Dose Reduction in Digital Breast Tomosynthesis. Lecture Notes in Computer Science, 2016, , 343-350.	1.0	1
60	Monte Carlo testing and verification of numerical algorithm implementations. , 2015, , .		0
61	Spatial distribution of adipose compartments size, shape and orientation in a CT breast image of a mastectomy specimen. , 2015, , .		5
62	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
63	cells covering $Z^3$	1.4	4
64	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
65	Application of the fractal Perlin noise algorithm for the generation of simulated breast tissue. Proceedings of SPIE, 2015, , .	0.8	6
66	Use of Wavelet Multiresolution Analysis to Reduce Radiation Dose in Digital Mammography. , 2015, , .		1
67	Feasibility study of dose reduction in digital breast tomosynthesis using non-local denoising algorithms. Proceedings of SPIE, 2015, , .	0.8	4
68	Non-Gaussian statistical properties of virtual breast phantoms. Proceedings of SPIE, 2014, , .	0.8	6
69	Automatic insertion of simulated microcalcification clusters in a software breast phantom. Proceedings of SPIE, 2014, , .	0.8	2
70	Development and evaluation of a 3D model observer with nonlinear spatiotemporal contrast sensitivity. Proceedings of SPIE, 2014, , .	0.8	6
71	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
72	Realistic Simulation of Breast Tissue Microstructure in Software Anthropomorphic Phantoms. Lecture Notes in Computer Science, 2014, , 348-355.	1.0	12

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73	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
74	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
75	Breast image registration by using non-linear local affine transformation. Proceedings of SPIE, 2013, , .	0.8	0
76	A virtual trial framework for quantifying the detectability of masses in breast tomosynthesis projection data. Medical Physics, 2013, 40, 051914.	1.6	56
77	Effect of denoising on the quality of reconstructed images in digital breast tomosynthesis. , 2013, , .		10
78	Exploring the relationship between SDNR and detectability in dual-energy breast x-ray imaging. , 2013, , .		1
79	Proposing a new velocity profile for continuous x-ray tube motion in digital breast tomosynthesis. , 2013, , .		1
80	Two methods for simulation of dense tissue distribution in software breast phantoms. , 2013, , .		3
81	Testing realism of software breast phantoms: texture analysis of synthetic mammograms. , 2013, , .		4
82	Integration of spatio-temporal contrast sensitivity with a multi-slice channelized Hotelling observer. , 2013, , .		9
83	Classifying Ductal Trees Using Geometrical Features and Ensemble Learning Techniques. Communications in Computer and Information Science, 2013, , 146-155.	0.4	2
84	Detecting and Localizing Tree Nodes in Anatomic Structures of Branching Topology. Lecture Notes in Computer Science, 2013, , 485-493.	1.0	0
85	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
86	A statistically defined anthropomorphic software breast phantom. Medical Physics, 2012, 39, 3375-3385.	1.6	39
87	Segmentation of anatomical branching structures based on texture features and conditional random field. Proceedings of SPIE, 2012, , .	0.8	0
88	Roadmap for efficient parallelization of breast anatomy simulation. , 2012, , .		7
89	Shape analysis of simulated breast anatomical structures. , 2012, , .		3
90	Partial volume simulation in software breast phantoms. Proceedings of SPIE, 2012, , .	0.8	4

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91	Optimized generation of high resolution breast anthropomorphic software phantoms. Medical Physics, 2012, 39, 2290-2302.	1.6	97
92	A fast scatter field estimator for digital breast tomosynthesis. , 2012, , .		9
93	Performance analysis of EM-MPM and K-means clustering in 3D ultrasound image segmentation. , 2012, , .		7
94	A Directional Small-Scale Tissue Model for an Anthropomorphic Breast Phantom. Lecture Notes in Computer Science, 2012, , 141-148.	1.0	3
95	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
96	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
97	A Modelling Framework for Evaluation of 2D-Mammography and Breast Tomosynthesis Systems. Lecture Notes in Computer Science, 2012, , 338-345.	1.0	3
98	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
99	Simulation of Three Material Partial Volume Averaging in a Software Breast Phantom. Lecture Notes in Computer Science, 2012, , 149-156.	1.0	3
100	Learning-Based Vessel Segmentation in Mammographic Images. , 2011, , .		3
101	Development of a physical 3D anthropomorphic breast phantom. Medical Physics, 2011, 38, 891-896.	1.6	90
102	Development and characterization of an anthropomorphic breast software phantom based upon region-growing algorithm. Medical Physics, 2011, 38, 3165-3176.	1.6	95
103	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
104	Segmentation of anatomical branching structures based on texture features and graph cut. , 2011, , .		3
105	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
106	Dynamic reconstruction and rendering of 3D tomosynthesis images. Proceedings of SPIE, 2011, , .	0.8	27
107	Automatic detection of regions of interest in mammographic images. Proceedings of SPIE, 2011, , .	0.8	1
108	Classifying Ductal Tree Structures Using Topological Descriptors of Branching. International Federation for Information Processing, 2011, , 455-463.	0.4	0

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109	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
110	Validation and optimization of digital breast tomosynthesis reconstruction using an anthropomorphic software breast phantom. , 2010, , .		7
111	Development of a 3D high-resolution physical anthropomorphic breast phantom. Proceedings of SPIE, 2010, , .	0.8	13
112	Mammographic image classification using histogram intersection. , 2010, , .		17
113	Probabilistic branching node detection using AdaBoost and hybrid local features. , 2010, , .		2
114	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
115	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
116	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
117	Analysis of Geometric Accuracy in Digital Breast Tomosynthesis Reconstruction. Lecture Notes in Computer Science, 2010, , 62-69.	1.0	8
118	Performance Tradeoffs in a Model Breast Tomosynthesis System. , 2010, , .		3
119	Probabilistic branching node detection using hybrid local features. , 2009, , .		1
120	Breast Percent Density: Estimation on Digital Mammograms and Central Tomosynthesis Projections. Radiology, 2009, 252, 40-49.	3.6	58
121	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
122	Breast tissue classification in digital breast tomosynthesis images using texture features: a feasibility study. Proceedings of SPIE, 2009, , .	0.8	3
123	Parenchymal Texture Analysis in Digital Breast Tomosynthesis for Breast Cancer Risk Estimation. Academic Radiology, 2009, 16, 283-298.	1.3	71
124	Estimating breast tomosynthesis performance in detection tasks with variable-background phantoms. Proceedings of SPIE, 2009, , .	0.8	16
125	Development of an anthropomorphic breast software phantom based on region growing algorithm. , 2008, , .		20
126	Simulation of tomosynthesis images based on an anthropomorphic software breast tissue phantom. Proceedings of SPIE, 2008, , .	0.8	10



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127	Breast percent density estimation from 3D reconstructed digital breast tomosynthesis images. , 2008, , .		2
128	Texture in digital breast tomosynthesis: a comparison between mammographic and tomographic characterization of parenchymal properties. , 2008, , .		5
129	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
130	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
131	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
132	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
133	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
134	Analysis of percent density estimates from digital breast tomosynthesis projection images. , 2007, , .		2
135	Analysis of texture patterns in medical images with an application to breast imaging. , 2007, , .		5
136	Analysis of parenchymal texture properties in breast tomosynthesis images. , 2007, , .		7
137	Establishing correspondence in mammograms and tomosynthesis projections. , 2007, , .		0
138	Mammogram registration: a phantom-based evaluation of compressed Breast Thickness variation effects. IEEE Transactions on Medical Imaging, 2006, 25, 188-197.	5.4	21
139	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
140	Comparison of breast ductal branching pattern classification using x-ray galactograms and MR autogalactograms. , 2006, , .		2
141	Registration of Mammograms and Breast Tomosynthesis Images. Lecture Notes in Computer Science, 2006, , 498-503.	1.0	5
142	Testing a wavelet based noise reduction method using computer-simulated mammograms. , 2005, 5745, 969.		2
143	Evaluation of a novel method of noise reduction using computer-simulated mammograms. Radiation Protection Dosimetry, 2005, 114, 81-84.	0.4	12
144	Calculation of the properties of digital mammograms using a computer simulation. Radiation Protection Dosimetry, 2005, 114, 395-398.	0.4	20

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145	Breast dosimetry using high-resolution voxel phantoms. Radiation Protection Dosimetry, 2005, 114, 359-363.	0.4	63
146	2-AFC observer study of shape and contrast discrimination in digital stereomammography. , 2004, 5372, 62.		1
147	Classification of Galactograms with Ramification Matrices. Academic Radiology, 2003, 10, 198-204.	1.3	24
148	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
149	Effects of quantum noise and binocular summation on dose requirements in stereoradiography. Medical Physics, 2003, 30, 3061-3071.	1.6	20
150	2-AFC observer study of digital stereomammography. , 2003, 5034, 1.		1
151	Non-rigid Registration of Mammograms Obtained with Variable Breast Compression: A Phantom Study. Lecture Notes in Computer Science, 2003, , 281-290.	1.0	4
152	Evaluation of Breast Ductal Networks Using Ramification Matrices. , 2003, , 249-252.		2
153	Mammogram synthesis using a 3D simulation. I. Breast tissue model and image acquisition simulation. Medical Physics, 2002, 29, 2131-2139.	1.6	122
154	Aliasing effects in digital images of line-pair phantoms. Medical Physics, 2002, 29, 1716-1718.	1.6	10
155	<title>Dose requirements in stereoradiography</title>. , 2002, 4682, 126.		2
156	Mammogram synthesis using a 3D simulation. II. Evaluation of synthetic mammogram texture. Medical Physics, 2002, 29, 2140-2151.	1.6	68