Lei Tian

List of Publications by Year
in descending order

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177	5,664	87888 38	79698 73
papers	citations	h-index	g-index

183	183	183	3258
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Computer-free computational imaging: optical computing for seeing through random media. Light: Science and Applications, 2022, 11, 37.	16.6	3
2	Adaptive 3D descattering with a dynamic synthesis network. Light: Science and Applications, 2022, 11, 42.	16.6	20
3	Deep learning augmented microscopy: a faster, wider view, higher resolution autofluorescence-harmonic microscopy. Light: Science and Applications, 2022, 11, 109.	16.6	1
4	Neurophotonic Tools for Microscopic Measurements and Manipulation: Status Report. Neurophotonics, 2022, 9, 013001.	3.3	17
5	Displacement-agnostic coherent imaging through scatter with an interpretable deep neural network. Optics Express, 2021, 29, 2244.	3.4	34
6	Model and learning-based computational 3D phase microscopy with intensity diffraction tomography. , 2021, , .		1
7	Single-cell cytometry via multiplexed fluorescence prediction by label-free reflectance microscopy. Science Advances, 2021, 7, .	10.3	47
8	Plasmonic Directional Photodetectors for Edge Enhancement. , 2021, , .		0
9	Large-scale holographic particle 3D imaging with the beam propagation model. Optics Express, 2021, 29, 17159.	3.4	13
10	Microsecond fingerprint stimulated Raman spectroscopic imaging by ultrafast tuning and spatial-spectral learning. Nature Communications, 2021, 12, 3052.	12.8	58
11	Deep Learning in Biomedical Optics. Lasers in Surgery and Medicine, 2021, 53, 748-775.	2.1	32
12	Acousto-optic ptychography. Optica, 2021, 8, 936.	9.3	12
13	Review of bio-optical imaging systems with a high space-bandwidth product. Advanced Photonics, 2021, 3, .	11.8	48
14	Roadmap on digital holography [Invited]. Optics Express, 2021, 29, 35078.	3.4	133
15	Computational Miniature Mesoscope for large-scale 3D fluorescence imaging. , 2021, , .		0
16	Anatomical Modeling of Brain Vasculature in Two-Photon Microscopy by Generalizable Deep Learning. BME Frontiers, 2021, 2021, 1-12.	4.5	15
17	Deep-learning Augmented Reflectance Microscopy for Label-free Multiplexed Cytometry. , 2021, , .		0
18	Intensity diffraction tomography with a non-paraxial multiple-scattering model. , 2021, , .		0

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19	Diffuser-based computational funduscopy. , 2021, , .		0
20	Single-shot 3D wide-field fluorescence imaging with a Computational Miniature Mesoscope. Science Advances, 2020, 6, .	10.3	59
21	Singleâ€Shot Ultraviolet Compressed Ultrafast Photography. Laser and Photonics Reviews, 2020, 14, 2000122.	8.7	26
22	SIMBA: Scalable Inversion in Optical Tomography Using Deep Denoising Priors. IEEE Journal on Selected Topics in Signal Processing, 2020, 14, 1163-1175.	10.8	30
23	High-Throughput, High-Resolution Interferometric Light Microscopy of Biological Nanoparticles. ACS Nano, 2020, 14, 2002-2013.	14.6	26
24	Plasmonic ommatidia for lensless compound-eye vision. Nature Communications, 2020, 11, 1637.	12.8	51
25	Inverse scattering for reflection intensity phase microscopy. Biomedical Optics Express, 2020, 11, 911.	2.9	13
26	Design of a high-resolution light field miniscope for volumetric imaging in scattering tissue. Biomedical Optics Express, 2020, 11, 1662.	2.9	20
27	LED array reflectance microscopy for scattering-based multi-contrast imaging. Optics Letters, 2020, 45, 1647.	3.3	6
28	Comparing the fundamental imaging depth limit of two-photon, three-photon, and non-degenerate two-photon microscopy. Optics Letters, 2020, 45, 2934.	3.3	21
29	Resolution-enhanced intensity diffraction tomography in high numerical aperture label-free microscopy. Photonics Research, 2020, 8, 1818.	7.0	18
30	Anatomical Modeling of Brain Vasculature in Two-Photon Microscopy by Generalizable Deep Learning. BME Frontiers, 2020, 2020, .	4.5	7
31	Predicting immunofluorescence images from reflectance microscopy via deep learning. , 2020, , .		0
32	Towards Large-scale Volumetric Fluorescence Imaging: Computational Miniature Mesoscope. , 2020, , .		0
33	Physics-Embedded Deep Learning for Intensity Diffraction Tomography. , 2020, , .		0
34	Diffuser-based computational imaging funduscope. Optics Express, 2020, 28, 19641.	3.4	6
35	Plasmonic Computational Compound-Eye Camera. Optics and Photonics News, 2020, 31, 41.	0.5	0
36	Virtual immunofluorescence staining from reflectance microscopy by deep learning. , 2020, , .		0

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37	Computational Miniature Mesoscope for Single-shot 3D Fluorescence Imaging. , 2020, , .		0
38	Imaging depth limit analysis in multiphoton microscopy using the beam propagation method. , 2020, , .		0
39	Imaging through diffusers with extended depth-of-field using a deep neural network. , 2020, , .		0
40	Coherent imaging through scatter using an interpretable deep neural network. , 2020, , .		0
41	Holographic particle localization using beam propagation method. , 2020, , .		0
42	Deep-Learning-based Computational Biomedical Microscopy with Uncertainty Quantification. , 2020, , .		0
43	Computational microscopy for quantitative phase imaging and refractive index tomography using annular illumination. , 2020, , .		0
44	Computational illumination for high-throughput intensity diffraction tomography of dynamic biological samples (Conference Presentation). , 2020, , .		0
45	Label-free quantitative 3D intensity diffraction tomographic imaging in high numerical aperture microscopy. , 2020, , .		0
46	Deep-learning-enabled virtual immunofluorescence staining based on reflectance microscopy. , 2020, , .		0
47	Physics-embedded deep learning for intensity diffraction tomography. , 2020, , .		0
48	Regularized Fourier Ptychography Using an Online Plug-and-play Algorithm. , 2019, , .		22
49	Deep spectral learning for label-free optical imaging oximetry with uncertainty quantification. Light: Science and Applications, 2019, 8, 102.	16.6	22
50	Holographic particle localization under multiple scattering. Advanced Photonics, 2019, 1, 1.	11.8	19
51	High-speed in vitro intensity diffraction tomography. Advanced Photonics, 2019, 1, 1.	11.8	100
52	Deep learning in computational microscopy. , 2019, , .		1
53	High-speed in vitro intensity diffraction tomography. , 2019, , .		2
54	High-throughput, volumetric quantitative phase imaging with multiplexed intensity diffraction tomography. Biomedical Optics Express, 2019, 10, 6432.	2.9	48

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55	Development of a beam propagation method to simulate the point spread function degradation in scattering media. Optics Letters, 2019, 44, 4989.	3.3	30
56	Reliable deep-learning-based phase imaging with uncertainty quantification. Optica, 2019, 6, 618.	9.3	127
57	Optimal illumination scheme for isotropic quantitative differential phase contrast microscopy. Photonics Research, 2019, 7, 890.	7.0	53
58	Deep learning approach to scalable imaging through scattering media. , 2019, , .		2
59	Multiplexed Intensity Diffraction Tomography (mIDT) for Dynamic, Label-Free Volumetric Biological Imaging. , 2019, , .		0
60	High-resolution Imaging of Nanoparticles in Wide-field Interferometric Scattering Microscopy. , 2019, , .		0
61	A deep learning approach to high space-bandwidth product phase microscopy with coded illumination (Conference Presentation). , 2019, , .		0
62	A one-for-all deep learning approach for imaging through diffusers (Conference Presentation). , 2019, , .		0
63	Learning approach to computational microscopy. , 2019, , .		0
64	Intensity-only reflection quantitative phase imaging for biological sample characterization (Conference Presentation). , 2019, , .		0
65	Learning speckle correlations for imaging through scattering (Conference Presentation). , 2019, , .		0
66	Deep speckle correlation: a deep learning approach toward scalable imaging through scattering media. Optica, 2018, 5, 1181.	9.3	352
67	High-throughput intensity diffraction tomography with a computational microscope. Biomedical Optics Express, 2018, 9, 2130.	2.9	79
68	Coherent Diffractive Imaging. , 2018, , 146-155.		0
69	A deep-learning approach for high-speed Fourier ptychographic microscopy. , 2018, , .		4
70	Directional Plasmonic Image Sensors for Lens-Free Compound-Eye Vision. , 2018, , .		1
71	Deep learning approach for Fourier ptychography microscopy. Optics Express, 2018, 26, 26470.	3.4	188
72	Sampling and processing for multiple scattering in inline compressive holography. , 2018, , .		1

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73	Direct inversion of intensity diffraction tomography with a computational microscope. , 2018, , .		0
74	First Born model for reflection-mode Fourier ptychographic microscopy. , 2018, , .		0
75	Computational microscopy: illumination coding and nonlinear optimization enables gigapixel 3D phase imaging. Proceedings of SPIE, 2017, , .	0.8	0
76	Computational microscopy: illumination coding and nonlinear optimization enables Gigapixel 3D phase imaging. , 2017, , .		1
77	Structured illumination microscopy with unknown patterns and a statistical prior. Biomedical Optics Express, 2017, 8, 695.	2.9	72
78	Compressive holographic video. Optics Express, 2017, 25, 250.	3.4	32
79	A Learning Approach to Compressive Holography. , 2017, , .		0
80	Computational imaging in multiple scattering with recursive models. , 2017, , .		0
81	Computational high-throughput microscopy using coded illumination. , 2017, , .		0
82	Differential Phase Contrast and Digital Refocusing in a Computational Reflection Interferometric Microscope for Nanoparticle Imaging. , 2017, , .		1
83	Special Section Guest Editorial: Optical Computational Imaging. Optical Engineering, 2017, 56, 041301.	1.0	0
84	3D differential phase contrast microscopy. Biomedical Optics Express, 2016, 7, 3940.	2.9	89
85	3D differential phase contrast microscopy. , 2016, , .		0
86	Nonlinear Optimization Algorithm for Partially Coherent Phase Retrieval and Source Recovery. IEEE Transactions on Computational Imaging, 2016, 2, 310-322.	4.4	34
87	High-speed gigapixel and 3D phase microscopy using coded illumination (Conference Presentation). , 2016, , .		1
88	Relaxation of mask design for single-shot phase imaging with a coded aperture. Applied Optics, 2016, 55, 1830.	2.1	25
89	Algorithmic self-calibration of illumination angles in Fourier ptychographic microscopy. , 2016, , .		6
90	Computational illumination for high-speed in vitro Fourier ptychographic microscopy. Optica, 2015, 2, 904.	9.3	243

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91	Multi-Contrast Imaging and Digital Refocusing on a Mobile Microscope with a Domed LED Array. PLoS ONE, 2015, 10, e0124938.	2.5	82
92	High resolution 3D computational imaging in scattering media. , 2015, , .		0
93	Phase microscopy and 3D imaging with partially coherent light. , 2015, , .		0
94	Large-scale phase retreival for metrology invited talk. , 2015, , .		0
95	Experimental robustness of Fourier ptychography phase retrieval algorithms. Optics Express, 2015, 23, 33214.	3.4	226
96	3D intensity and phase imaging from light field measurements in an LED array microscope. Optica, 2015, 2, 104.	9.3	403
97	Multi-mode microscopy in real-time with LED array illumination. Proceedings of SPIE, 2015, , .	0.8	0
98	Partially coherent phase imaging with source shapes estimation. Proceedings of SPIE, 2015, , .	0.8	0
99	Quantitative phase recovery from asymmetric illumination on an LED array microscope. , 2015, , .		1
100	Machine learning for 3D microscopy. Nature, 2015, 523, 416-417.	27.8	53
101	Transport of intensity phase retrieval and computational imaging for partially coherent fields: The phase space perspective. Optics and Lasers in Engineering, 2015, 71, 20-32.	3.8	268
102	Partially coherent phase imaging with simultaneous source recovery. Biomedical Optics Express, 2015, 6, 257.	2.9	28
103	Empirical concentration bounds for compressive holographic bubble imaging based on a Mie scattering model. Optics Express, 2015, 23, 4715.	3.4	20
104	Quantitative differential phase contrast imaging in an LED array microscope. Optics Express, 2015, 23, 11394.	3.4	242
105	3D imaging in volumetric scattering media using phase-space measurements. Optics Express, 2015, 23, 14461.	3.4	67
106	Motion deblurring with temporally coded illumination in an LED array microscope. Optics Letters, 2015, 40, 2281.	3.3	15
107	Self-learning based Fourier ptychographic microscopy. Optics Express, 2015, 23, 18471.	3.4	52
108	3D Phase Retrieval with Computational Illumination. , 2015, , .		4

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109	Experimental robustness of Fourier Ptychographic phase retrieval algorithms. , 2015, , .		2
110	3D Fourier Ptychographic imaging from light field measurements in an LED array microscope. , 2015, , .		1
111	Effects of Particle Concentration on Compressive Holographic Particle Flow Imaging. , 2015, , .		0
112	Computational CellScope: Multi-Contrast Imaging on a Smartphone-Based Microscope Using a Domed Programmable LED Array. , 2015, , .		0
113	Source Shape Estimation in Partially Coherent Phase Imaging with Defocused Intensity. , 2015, , .		0
114	Partially coherent phase microscopy with arbitrary illumination source shape. , 2014, , .		1
115	Defocus-based quantitative phase imaging by coded illumination. Proceedings of SPIE, 2014, , .	0.8	3
116	3D differential phase-contrast microscopy with computational illumination using an LED array. Optics Letters, 2014, 39, 1326.	3.3	146
117	Multiplexed coded illumination for Fourier Ptychography with an LED array microscope. Biomedical Optics Express, 2014, 5, 2376.	2.9	452
118	Multiplexed coded illumination in Fourier Ptychography. , 2014, , .		1
119	Compressive holographic two-dimensional localization with 1/30^2 subpixel accuracy. Optics Express, 2014, 22, 9774.	3.4	18
120	Transport of Intensity phase imaging by intensity spectrum fitting of exponentially spaced defocus planes. Optics Express, 2014, 22, 10661.	3.4	136
121	Low-noise phase imaging by hybrid uniform and structured illumination transport of intensity equation. Optics Express, 2014, 22, 26696.	3.4	40
122	Coherence engineering. , 2014, , .		0
123	Non-uniform sampling and Gaussian process regression in transport of intensity phase imaging. , 2014, , .		0
124	Real-time brightfield, darkfield, and phase contrast imaging in a light-emitting diode array microscope. Journal of Biomedical Optics, 2014, 19, 1.	2.6	89
125	Transport of intensity phase imaging in the presence of curl effects induced by strongly absorbing photomasks. Applied Optics, 2014, 53, J1.	2.1	24
126	Hamiltonian and phase-space representation of spatial solitons. Optics Communications, 2014, 318, 199-204.	2.1	1

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127	Computational techniques in propagation-based x-ray phase imaging. , 2014, , .		2
128	Illumination coding for fast Fourier Ptychography with large field-of-view and high-resolution. , 2014, , .		1
129	High-speed and high-resolution phase-space imaging with digital micromirror devices. , 2014, , .		1
130	Coded Aperture Pair for Phase Imaging. , 2014, , .		0
131	Computational illumination for 3D differential phase contrast imaging. , 2014, , .		0
132	Coherence engineering for phase microscopy. , 2014, , .		0
133	The transport of intensity equation for optical path length recovery using partially coherent illumination. Optics Express, 2013, 21, 14430.	3.4	108
134	Digital holography with nonlinear diffusion regularization. , 2013, , .		1
135	Wigner function measurement using a lenslet array. Optics Express, 2013, 21, 10511.	3.4	20
136	Compressive x-ray phase tomography based on the transport of intensity equation. Optics Letters, 2013, 38, 3418.	3.3	45
137	Visible and x-ray quantitative phase imaging. , 2013, , .		0
138	Compressive Phase Space Tomography. , 2013, , .		0
139	Study of a seal whiskerâ€“inspired flow sensor using compressive holography. , 2013, , .		3
140	Partially Coherent Phase Recovery by Kalman Filtering. , 2013, , .		2
141	Compressive Xâ€“ray phase tomography based intensity transpart. , 2013, , .		1
142	Source diversity for transport of intensity phase imaging. , 2013, , .		0
143	Nonlinear diffusion regularization for transport of intensity phase imaging. Optics Letters, 2012, 37, 4131.	3.3	61
144	Path-independent phase unwrapping using phase gradient and total-variation (TV) denoising. Optics Express, 2012, 20, 14075.	3.4	65

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145	Wigner functions for evanescent waves. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2012, 29, 1927.	1.5	0
146	Scanning-free compressive holography for object localization with subpixel accuracy. Optics Letters, 2012, 37, 3357.	3.3	33
147	Improved axial resolution of digital holography via compressive reconstruction. , 2012, , .		3
148	Implementation of the GRIN solid immersion lens. , 2012, , .		0
149	Experimental compressive phase space tomography. Optics Express, 2012, 20, 8296.	3.4	47
150	Wave-field Imaging with Partially Coherent Light. , 2012, , .		2
151	The transport of intensity equation and partially coherent fields. , 2012, , .		1
152	Path-independent phase unwrapping using phase derivative and total-variation (TV) denoising. , 2012, , .		1
153	Two dimensional sub-pixel movement detection using spiral phase filtering and compressive holography. , 2012, , .		2
154	Transport of intensity imaging with TV regularization and nonlinear diffusion denoising. , 2012, , .		0
155	Experimental 4D compressive phase space tomography. , 2012, , .		0
156	Talbot lithography using aperiodic structures. , 2011, , .		0
157	Aperiodic subwavelength LÃ¼neburg lens with nonlinear Kerr effect compensation. Optics Express, 2011, 19, 2257.	3.4	9
158	Wigner functions defined with Laplace transform kernels. Optics Express, 2011, 19, 21938.	3.4	1
159	From Two-Dimensional Colloidal Self-Assembly to Three-Dimensional Nanolithography. Nano Letters, 2011, 11, 2533-2537.	9.1	98
160	Compressive Phase Retrieval. , 2011, , .		1
161	Digital holographic imaging of multi-phase flows. , 2011, , .		2
162	Compressive holographic inversion of particle scattering. , 2011, , .		2

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163	Sub-pixel Movement Detection with Compressive Holography. , 2011, , .		0
164	Compressive phase space tomography. , 2011, , .		0
165	Compressive phase space tomography. , 2011, , .		0
166	Compressive holographic inversion of particle scattering. , 2011, , .		1
167	Hamiltonian Description of Spatial Solitons. , 2011, , .		0
168	Imaging past obstructions. , 2011, , .		0
169	Nonlinear Kerr effect aperiodic Lüneburg lens. , 2010, , .		1
170	Quantitative measurement of size and three-dimensional position of fast-moving bubbles in air-water mixture flows using digital holography. Applied Optics, 2010, 49, 1549.	2.1	127
171	Transport of Intensity imaging with higher order derivatives. Optics Express, 2010, 18, 12552.	3.4	321
172	Iterative nonlinear beam propagation using Hamiltonian ray tracing and Wigner distribution function. Optics Letters, 2010, 35, 4148.	3.3	44
173	Hamiltonian Ray-tracing with Wigner Distribution Function for Wave Propagation in Inhomogeneous Media. , 2010, , .		0
174	Digital Holography Applied to Quantitative Measurement of Oil-drop in Oil-Water Two-Phase Flows. , 2010, , .		0
175	Bubble Size Measurement in High-Density Air-water Mixture Flows with Wide Size Distributions Using Digital Holography. , 2009, , .		0
176	Transport of Intensity Imaging with Higher Order Derivatives. , 2009, , .		2
177	Rapid, high-resolution phase images for live cell imaging. SPIE Newsroom, 0, , .	0.1	0