Laura Waller

List of Publications by Year
in descending order

100 papers	6,234 citations	71061 41 h-index	95218 68 g-index
107 all docs	107 docs citations	107 times ranked	3786 citing authors

#	Article	IF	Citations
1	Recent advances in lensless imaging. Optica, 2022, 9, 1.	4.8	67
2	Deep learning for fast spatially varying deconvolution. Optica, 2022, 9, 96.	4.8	51
3	Three-dimensional multi-site random access photostimulation (3D-MAP). ELife, 2022, 11, .	2.8	8
4	Self-calibrated 3D differential phase contrast microscopy with optimized illumination. Biomedical Optics Express, 2022, 13, 1671.	1.5	9
5	A MEMS-Based Optical Scanning System for Precise, High-Speed Neural Interfacing. IEEE Journal of Solid-State Circuits, 2022, 57, 3442-3452.	3.5	3
6	Ion complexation waves emerge at the curved interfaces of layered minerals. Nature Communications, 2022, 13, .	5.8	10
7	Nondestructive, high-resolution, chemically specific 3D nanostructure characterization using phase-sensitive EUV imaging reflectometry. Science Advances, 2021, 7, .	4.7	55
8	19.3 A MEMS-Based Dynamic Light Focusing System for Single-Cell Precision in optogenetics. , 2021, , .		1
9	Pycro-Manager: open-source software for customized and reproducible microscope control. Nature Methods, 2021, 18, 226-228.	9.0	54
10	Learned adaptive multiphoton illumination microscopy for large-scale immune response imaging. Nature Communications, 2021, 12, 1916.	5.8	21
11	Depth from Defocus as a Special Case of the Transport of Intensity Equation. , 2021, , .		0
12	Untrained networks for compressive lensless photography. Optics Express, 2021, 29, 20913.	1.7	34
13	Picometer sensitivity metrology for EUV absorber phase. Journal of Micro-nanopatterning, Materials, and Metrology, 2021, 20, .	0.4	0
14	MultiWienerNet: Deep Learning for Fast Shift-Varying Deconvolution. , 2021, , .		1
15	Physics-Based Learned Design for Fourier DiffuserScope. , 2021, , .		0
16	Shift-Variant Deblurring for Rotationally Symmetric Systems. , 2021, , .		0
17	Image denoising for fluorescence microscopy by supervised to self-supervised transfer learning. Optics Express, 2021, 29, 41303.	1.7	14
18	A multiple scattering algorithm for three dimensional phase contrast atomic electron tomography. Ultramicroscopy, 2020, 208, 112860.	0.8	36

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19	Miniscope3D: optimized single-shot miniature 3D fluorescence microscopy. Light: Science and Applications, 2020, 9, 171.	7.7	95
20	Memory-Efficient Learning for Large-Scale Computational Imaging. IEEE Transactions on Computational Imaging, 2020, 6, 1403-1414.	2.6	39
21	Extreme ultraviolet microscope characterization using photomask surface roughness. Scientific Reports, 2020, 10, 11673.	1.6	3
22	A micromirror array with annular partitioning for high-speed random-access axial focusing. Light: Science and Applications, 2020, 9, 183.	7.7	23
23	High resolution étendue expansion for holographic displays. ACM Transactions on Graphics, 2020, 39, .	4.9	48
24	High-throughput fluorescence microscopy using multi-frame motion deblurring. Biomedical Optics Express, 2020, 11, 281.	1.5	7
25	On-chip fluorescence microscopy with a random microlens diffuser. Optics Express, 2020, 28, 8384.	1.7	48
26	Fourier DiffuserScope: single-shot 3D Fourier light field microscopy with a diffuser. Optics Express, 2020, 28, 28969.	1.7	31
27	Roadmap on 3D integral imaging: sensing, processing, and display. Optics Express, 2020, 28, 32266.	1.7	105
28	Multi-layer Born multiple-scattering model for 3D phase microscopy. Optica, 2020, 7, 394.	4.8	86
29	Deep phase decoder: self-calibrating phase microscopy with an untrained deep neural network. Optica, 2020, 7, 559.	4.8	95
30	Spectral DiffuserCam: lensless snapshot hyperspectral imaging with a spectral filter array. Optica, 2020, 7, 1298.	4.8	113
31	Compressed Sensing 3D Fluorescence Microscopy Using Optimized Phase Mask. , 2020, , .		0
32	Snapshot hyperspectral imaging using a random phase mask and spectral filter array. , 2020, , .		1
33	Multi-sensor lensless imaging: synthetic large-format sensing with a disjoint sensor array. , 2020, , .		1
34	Large-scale computational recovery of 3D refractive-index in multiple-scattering biology. , 2020, , .		0
35	Data-Driven Design for Fourier Ptychographic Microscopy. , 2019, , .		26
36	Video from Stills: Lensless Imaging with Rolling Shutter. , 2019, , .		24

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37	3D Imaging Using HAADF-STEM and HRTEM Atomic Electron Tomography. Microscopy and Microanalysis, 2019, 25, 394-395.	0.2	0
38	Low-cost, sub-micron resolution, wide-field computational microscopy using opensource hardware. Scientific Reports, 2019, 9, 7457.	1.6	81
39	Physics-Based Learned Design: Optimized Coded-Illumination for Quantitative Phase Imaging. IEEE Transactions on Computational Imaging, 2019, 5, 344-353.	2.6	95
40	Concentric Micromirror Array for High-Speed Optical Dynamic Focusing. , 2019, , .		1
41	Computational structured illumination for high-content fluorescence and phase microscopy. Biomedical Optics Express, 2019, 10, 1978.	1.5	30
42	Speckle-structured illumination for 3D phase and fluorescence computational microscopy. Biomedical Optics Express, 2019, 10, 3635.	1.5	27
43	Miniature 3D Fluorescence Microscope Using Random Microlenses. , 2019, , .		2
44	Single-shot 3D fluorescence microscopy with Fourier DiffuserCam. , 2019, , .		2
45	Learned reconstructions for practical mask-based lensless imaging. Optics Express, 2019, 27, 28075.	1.7	99
46	Deep learning for single-shot autofocus microscopy. Optica, 2019, 6, 794.	4.8	101
47	High-resolution 3D refractive index microscopy of multiple-scattering samples from intensity images. Optica, 2019, 6, 1211.	4.8	132
48	Learning for lensless mask-based imaging. , 2019, , .		1
49	Holographic Display and Volumetric Light Sculpting by Dynamic Synthesis of 4d Light Fields. , 2019, , .		2
50	SEAGLE: Sparsity-Driven Image Reconstruction Under Multiple Scattering. IEEE Transactions on Computational Imaging, 2018, 4, 73-86.	2.6	55
51	Precise multimodal optical control of neural ensemble activity. Nature Neuroscience, 2018, 21, 881-893.	7.1	222
52	Linear and Nonlinear Reconstruction Algorithms for Atomic-Resolution Tomography Using Phase Contrast Electron Microscopy. Microscopy and Microanalysis, 2018, 24, 110-111.	0.2	1
53	Learning-Based Image Reconstruction via Parallel Proximal Algorithm. IEEE Signal Processing Letters, 2018, 25, 989-993.	2.1	12
54	Efficient illumination angle self-calibration in Fourier ptychography. Applied Optics, 2018, 57, 5434.	0.9	88

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55	DiffuserCam: lensless single-exposure 3D imaging. Optica, 2018, 5, 1.	4.8	371
56	Aberration recovery by imaging a weak diffuser. Optics Express, 2018, 26, 21054.	1.7	9
57	3D Fluorescence Microscopy with DiffuserCam. , 2018, , .		4
58	All‑Silicon Broadband Ultraviolet Metasurfaces. Advanced Materials, 2018, 30, e1802632.	11.1	51
59	Partially Coherent Holographic Temporal Focusing for 3D Light Sculpting with Single Neuron Resolution. , 2018, , .		0
60	Motion-resolved quantitative phase imaging. Biomedical Optics Express, 2018, 9, 5456.	1.5	11
61	Quantitative differential phase contrast (DPC) microscopy with computational aberration correction. Optics Express, 2018, 26, 32888.	1.7	38
62	Three-dimensional scanless holographic optogenetics with temporal focusing (3D-SHOT). Nature Communications, 2017, 8, 1228.	5.8	168
63	Computational microscopy: illumination coding and nonlinear optimization enables Gigapixel 3D phase imaging. , 2017, , .		1
64	Structured illumination microscopy with unknown patterns and a statistical prior. Biomedical Optics Express, 2017, 8, 695.	1.5	72
65	3D computer-generated holography by non-convex optimization. Optica, 2017, 4, 1306.	4.8	143
66	Quasi-Dome: A Self-Calibrated High-NA LED Illuminator for Fourier Ptychography. , 2017, , .		16
67	DiffuserCam: Diffuser-Based Lensless Cameras. , 2017, , .		11
68	Single-shot quantitative phase microscopy with color-multiplexed differential phase contrast (cDPC). PLoS ONE, 2017, 12, e0171228.	1.1	68
69	Special Section Guest Editorial: UC Berkeley Sculpted Light in the Brain 2017 debates future technologies to communicate with the brain. Neurophotonics, 2017, 4, 1.	1.7	0
70	3D differential phase contrast microscopy. Biomedical Optics Express, 2016, 7, 3940.	1.5	89
71	Optical transfer function characterization using a weak diffuser. , 2016, , .		1
72	Nonlinear Optimization Algorithm for Partially Coherent Phase Retrieval and Source Recovery. IEEE Transactions on Computational Imaging, 2016, 2, 310-322.	2.6	34

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73	Single-shot diffuser-encoded light field imaging. , 2016, , .		25
74	Compressive light-field microscopy for 3D neural activity recording. Optica, 2016, 3, 517.	4.8	146
75	Standardizing the resolution claims for coherent microscopy. Nature Photonics, 2016, 10, 68-71.	15.6	94
76	Computational illumination for high-speed in vitro Fourier ptychographic microscopy. Optica, 2015, 2, 904.	4.8	243
77	Multi-Contrast Imaging and Digital Refocusing on a Mobile Microscope with a Domed LED Array. PLoS ONE, 2015, 10, e0124938.	1.1	82
78	Large-scale phase retreival for metrology invited talk. , 2015, , .		0
79	Experimental robustness of Fourier ptychography phase retrieval algorithms. Optics Express, 2015, 23, 33214.	1.7	226
80	Quantitative phase retrieval with arbitrary pupil and illumination. Optics Express, 2015, 23, 26672.	1.7	26
81	3D intensity and phase imaging from light field measurements in an LED array microscope. Optica, 2015, 2, 104.	4.8	403
82	Machine learning for 3D microscopy. Nature, 2015, 523, 416-417.	13.7	53
83	Partially coherent phase imaging with simultaneous source recovery. Biomedical Optics Express, 2015, 6, 257.	1.5	28
84	Quantitative differential phase contrast imaging in an LED array microscope. Optics Express, 2015, 23, 11394.	1.7	242
85	3D imaging in volumetric scattering media using phase-space measurements. Optics Express, 2015, 23, 14461.	1.7	67
86	Motion deblurring with temporally coded illumination in an LED array microscope. Optics Letters, 2015, 40, 2281.	1.7	15
87	3D Phase Retrieval with Computational Illumination. , 2015, , .		4
88	Experimental robustness of Fourier Ptychographic phase retrieval algorithms. , 2015, , .		2
89	3D differential phase-contrast microscopy with computational illumination using an LED array. Optics Letters, 2014, 39, 1326.	1.7	146
90	Multiplexed coded illumination for Fourier Ptychography with an LED array microscope. Biomedical Optics Express, 2014, 5, 2376.	1.5	452

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91	Transport of Intensity phase imaging by intensity spectrum fitting of exponentially spaced defocus planes. Optics Express, 2014, 22, 10661.	1.7	136
92	Coherence engineering. , 2014, , .		0
93	Non-uniform sampling and Gaussian process regression in transport of intensity phase imaging. , 2014, , .		0
94	Real-time brightfield, darkfield, and phase contrast imaging in a light-emitting diode array microscope. Journal of Biomedical Optics, 2014, 19, 1.	1.4	89
95	Phase and amplitude imaging from noisy images by Kalman filtering. Optics Express, 2011, 19, 2805.	1.7	50
96	Quantitative Phase Imaging in a Volume Holographic Microscope. , 2010, , .		1
97	Transport of Intensity imaging with higher order derivatives. Optics Express, 2010, 18, 12552.	1.7	321
98	Phase from chromatic aberrations. Optics Express, 2010, 18, 22817.	1.7	126
99	Transport of intensity phase imaging in a volume holographic microscope. Optics Letters, 2010, 35, 2961.	1.7	97
100	Interferometric tomography of fuel cells for monitoring membrane water content. Optics Express, 2009, 17, 14806.	1.7	4