Emil Y Sidky

List of Publications by Citations

81 papers	5,155 citations	23 h-index	71 g-index
122 ext. papers	6,141 ext. citations	4.3 avg, IF	6.6 L-index

#	Paper	IF	Citations
81	MOCCA: Mirrored Convex/Concave Optimization for Nonconvex Composite Functions. *Journal of Machine Learning Research*, **2016**, 17, 1-51	28.6	2214
80	Image reconstruction in circular cone-beam computed tomography by constrained, total-variation minimization. *Physics in Medicine and Biology*, **2008**, 53, 4777-807	3.8	1178
79	Evaluation of sparse-view reconstruction from flat-panel-detector cone-beam CT. *Physics in Medicine and Biology*, **2010**, 55, 6575-99	3.8	245
78	Convex optimization problem prototyping for image reconstruction in computed tomography with the Chambolle-Pock algorithm. *Physics in Medicine and Biology*, **2012**, 57, 3065-91	3.8	192
77	Enhanced imaging of microcalcifications in digital breast tomosynthesis through improved image-reconstruction algorithms. *Medical Physics*, **2009**, 36, 4920-32	4.4	123
76	Quantifying admissible undersampling for sparsity-exploiting iterative image reconstruction in X-ray CT. *IEEE Transactions on Medical Imaging*, **2013**, 32, 460-73	11.7	91
75	A robust method of x-ray source spectrum estimation from transmission measurements: Demonstrated on computer simulated, scatter-free transmission data. *Journal of Applied Physics*, **2005**, 97, 124701	2.5	86
74	An algorithm for constrained one-step inversion of spectral CT data. *Physics in Medicine and Biology*, **2016**, 61, 3784-818	3.8	83
73	Region of interest reconstruction from truncated data in circular cone-beam CT. *IEEE Transactions on Medical Imaging*, **2006**, 25, 869-81	11.7	67
72	A constrained, total-variation minimization algorithm for low-intensity x-ray CT. *Medical Physics*, **2011**, 38 Suppl 1, S117	4.4	66
71	Constrained TV Minimization for Enhanced Exploitation of Gradient Sparsity: Application to CT Image Reconstruction. *IEEE Journal of Translational Engineering in Health and Medicine*, **2014**, 2,	3	54
70	Quantum mechanical calculation of ejected electron spectra for ion-atom collisions. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **1998**, 31, 2949-2960	1.3	41
69	Image reconstruction exploiting object sparsity in boundary-enhanced X-ray phase-contrast tomography. *Optics Express*, **2010**, 18, 10404-22	3.3	40
68	Minimum data image reconstruction algorithms with shift-invariant filtering for helical, cone-beam CT. *Physics in Medicine and Biology*, **2005**, 50, 1643-57	3.8	38
67	Impact of polychromatic x-ray sources on helical, cone-beam computed tomography and dual-energy methods. *Physics in Medicine and Biology*, **2004**, 49, 2293-303	3.8	37
66	Image reconstruction and scan configurations enabled by optimization-based algorithms in multispectral CT. *Physics in Medicine and Biology*, **2017**, 62, 8763-8793	3.8	34
65	Artifact reduction in short-scan CBCT by use of optimization-based reconstruction. *Physics in Medicine and Biology*, **2016**, 61, 3387-406	3.8	30

64	Investigation of discrete imaging models and iterative image reconstruction in differential X-ray phase-contrast tomography. *Optics Express*, **2012**, 20, 10724-49	3.3	29
63	Phase-amplitude method for calculating resonance energies and widths for one-dimensional potentials. *Physical Review A*, **1999**, 60, 3586-3592	2.6	27
62	Investigation of optimization-based reconstruction with an image-total-variation constraint in PET. *Physics in Medicine and Biology*, **2016**, 61, 6055-84	3.8	26
61	A Spectral CT Method to Directly Estimate Basis Material Maps From Experimental Photon-Counting Data. *IEEE Transactions on Medical Imaging*, **2017**, 36, 1808-1819	11.7	25
60	Impact-velocity dependence of ejected-electron distributions for ionization in proton-hydrogen collisions. *Physical Review A*, **1999**, 60, 377-384	2.6	24
59	Analysis of iterative region-of-interest image reconstruction for x-ray computed tomography. *Journal of Medical Imaging*, **2014**, 1, 031007	2.6	23
58	Optimization-based image reconstruction with artifact reduction in C-arm CBCT. *Physics in Medicine and Biology*, **2016**, 61, 7300-7333	3.8	22
57	Electrons ejected with half the projectile velocity and the saddle point mechanism in ion-atom collisions. *Physical Review Letters*, **2000**, 85, 1634-7	7.4	22
56	Velocity-matching model for electron capture in keV atomic collisions. *Physical Review A*, **1996**, 54, 1417-1429	2.6	22
55	Feasibility of half-data image reconstruction in 3-D reflectivity tomography with a spherical aperture. *IEEE Transactions on Medical Imaging*, **2005**, 24, 1100-12	11.7	20
54	First-order convex feasibility algorithms for x-ray CT. *Medical Physics*, **2013**, 40, 031115	4.4	19
53	Noise properties of CT images reconstructed by use of constrained total-variation, data-discrepancy minimization. *Medical Physics*, **2015**, 42, 2690-8	4.4	16
52	Implementation of ultra-low-dose CBCT for routine 2D orthodontic diagnostic radiographs: Cephalometric landmark identification and image quality assessment. *Seminars in Orthodontics*, **2015**, 21, 233-247	1.2	15
51	Task-based optimization of dedicated breast CT via Hotelling observer metrics. *Medical Physics*, **2014**, 41, 101917	4.4	15
50	Few-view single photon emission computed tomography (SPECT) reconstruction based on a blurred piecewise constant object model. *Physics in Medicine and Biology*, **2013**, 58, 5629-52	3.8	15
49	EMPIRICAL AVERAGE-CASE RELATION BETWEEN UNDERSAMPLING AND SPARSITY IN X-RAY CT. *Inverse Problems and Imaging*, **2015**, 9, 431-446	2.1	14
48	Algorithm-enabled partial-angular-scan configurations for dual-energy CT. *Medical Physics*, **2018**, 45, 1857-1870	4.4	13
47	Estimating the spectrum in computed tomography via Kullback-Leibler divergence constrained optimization. *Medical Physics*, **2019**, 46, 81-92	4.4	12

46	Do CNNs Solve the CT Inverse Problem?. *IEEE Transactions on Biomedical Engineering*, **2021**, 68, 1799-1810	5	12
45	Consistency Conditions for Cone-Beam CT Data Acquired with a Straight-Line Source Trajectory. *Tsinghua Science and Technology*, **2010**, 15, 56-61	3.4	11
44	Accurate image reconstruction in circular cone-beam computed tomography by total variation minimization: a preliminary investigation **2006**,		11
43	Effect of the data constraint on few-view, fan-beam CT image reconstruction by TV minimization **2006**,		11
42	X-ray tomography system to investigate granular materials during mechanical loading. *Review of Scientific Instruments*, **2014**, 85, 083708	1.7	9
41	Investigating simulation-based metrics for characterizing linear iterative reconstruction in digital breast tomosynthesis. *Medical Physics*, **2017**, 44, e279-e296	4.4	8
40	Noise properties of chord-image reconstruction. *IEEE Transactions on Medical Imaging*, **2007**, 26, 1328-44	11.7	8
39	Investigation of Sparse Data Mouse Imaging Using Micro-CT with a Carbon-Nanotube-Based X-ray Source. *Tsinghua Science and Technology*, **2010**, 15, 74-78	3.4	7
38	Optimization-Based Image Reconstruction From Low-Count, List-Mode TOF-PET Data. *IEEE Transactions on Biomedical Engineering*, **2018**, 65, 936-946	5	6
37	The role of the potential saddle in He2++ H impact ionization. *Journal of Physics B: Atomic, Molecular and Optical Physics*, **2001**, 34, L163-L172	1.3	6
36	Frequency extrapolation by nonconvex compressive sensing **2011**,		5
35	Preliminary investigation of optimization-based image reconstruction for TOF PET with sparse configurations **2019**,		5
34	Directional-TV algorithm for image reconstruction from limited-angular-range data. *Medical Image Analysis*, **2021**, 70, 102030	15.4	5
33	Non-convex primal-dual algorithm for image reconstruction in spectral CT. *Computerized Medical Imaging and Graphics*, **2021**, 87, 101821	7.6	5
32	A Convex Reconstruction Model for X-ray Tomographic Imaging with Uncertain Flat-fields. *IEEE Transactions on Computational Imaging*, **2018**, 4, 17-31	4.5	4
31	Optimizing algorithm parameters based on a model observer detection task for image reconstruction in digital breast tomosynthesis **2011**,		4
30	Dual-Energy Technique at Low Tube Voltages for Small Animal Imaging. *Tsinghua Science and Technology*, **2010**, 15, 79-86	3.4	4
29	Imaging of fiber-like structures in digital breast tomosynthesis. *Journal of Medical Imaging*, **2019**, 6, 031406	2.4	4

28	Use of the Hotelling observer to optimize image reconstruction in digital breast tomosynthesis. *Journal of Medical Imaging*, **2016**, 3, 011008	2.6	3
27	Region of interest based Hotelling observer for computed tomography with comparison to alternative methods. *Journal of Medical Imaging*, **2014**, 1, 031010	2.6	3
26	In-depth analysis of cone-beam CT image reconstruction by ideal observer performance on a detection task **2008**,		3
25	Accurate image reconstruction in CT from projection data taken at few-views **2006**, 6142, 784		3
24	Reconstruction of 3D regions-of-interest from data in reduced helical cone-beam scans. *Technology in Cancer Research and Treatment*, **2005**, 4, 143-50	2.7	3
23	TV-constrained incremental algorithms for low-intensity CT image reconstruction **2015**,		2
22	An investigation of regularization for basis image reconstruction in spectral CT **2015**,		2
21	Constrained TV-minimization image reconstruction for industrial CT system **2014**,		2
20	Iterative image reconstruction with variable resolution in CT **2011**,		2
19	Ensuring convergence in total-variation-based reconstruction for accurate microcalcification imaging in breast X-ray CT **2011**,		2
18	Region of Interest Imaging for a General Trajectory with the Rebinned BPF Algorithm. *Tsinghua Science and Technology*, **2010**, 15, 68-73	3.4	2
17	Image reconstruction with a half-detector in single-photon emission computed tomography with nonuniform attenuation. *Optical Engineering*, **2003**, 42, 2506	1.1	2
16	The Phase-Amplitude Method of Solving the Wave Equation. *Physics Essays*, **2000**, 13, 408-411	1.1	2
15	Propensity Rules for Alignment and Orientation in Electron-Transfer Processes. *Physics Essays*, **2000**, 13, 489-495	1.1	2
14	Dual-energy CT imaging with limited-angular-range data. *Physics in Medicine and Biology*, **2021**, 66,	3.8	2
13	Dual-energy CT imaging over non-overlapping, orthogonal arcs of limited-angular ranges. *Journal of X-Ray Science and Technology*, **2021**, 29, 975-985	2.1	2
12	TV constrained CT image reconstruction with discretized natural pixels **2016**,		1
11	Basis-image reconstruction directly from sparse-view data in spectral CT **2014**,		1

10	Analysis of image-reconstruction algorithms for circular, cone-beam CT by Hotelling observer performance on a detection task. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2009**, 2009, 997-9	0.9	1
9	Initial experience in image reconstruction from limited-angle C-arm CBCT data **2011**,		1
8	A compressed sensing algorithm for sparse-view pinhole Single Photon Emission Computed Tomography **2011**,		1
7	Convergence of iterative image reconstruction algorithms for Digital Breast Tomosynthesis **2012**,		1
6	A Rebinning-type Backprojection-Filtration Algorithm for Image Reconstruction in Helical Cone-beam CT **2006**,		1
5	Optimization-based algorithm for solving the discrete x-ray transform with nonlinear partial volume effect. *Journal of Medical Imaging*, **2020**, 7, 053502	2.6	1
4	Alternating Minimization Based Framework for Simultaneous Spectral Calibration and Image Reconstruction in Spectral CT **2018**,		1
3	Reduction of Angularly-Varying-Data Truncation in C-Arm CBCT Imaging. *Sensing and Imaging*, **2018**, 19, 1	1.4	1
2	A signal detection model for quantifying overregularization in nonlinear image reconstruction. *Medical Physics*, **2021**, 48, 6312-6323	4.4	0
1	Total and state-selective electron capture cross sections for N4+-H collisions. *Physical Review A*, **1999**, 59, 1994-1997	2.6	