aXonica - A Magnetic Resonance Imaging Solution

Supplementary Tables

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version v3.1

A specific criteria is used for enclosure of tools in aXonica. Softwares which are included are due to these specific reasons:

- Publication Date (later then 2012)
- Freeware License
- Linux based
- Offline

Softwares which are Plug-ins are also mentioned in the table. Table I shows the selection criterion. Database Tools are also not included and are mentioned in Table II.

TABLE I: aXonica Selection Criteria

Sr. no	Software Tool Name	Pub. Date (2012-)	Free	Linux based	Offline	Installed
Image Preprocessing						
Image Visualization						
1	Dipy [1]	✓	✓	✓	✓	✓
2	FiberWeb [2]	✓		✓	✓	
3	AFQ-Browser [3]	✓	✓	✓		
4	BrainBrowser [4]	✓	✓	✓		
5	Scalable Brain Atlas [5]		✓	✓	✓	
6	IGSTK [6]		✓	✓	✓	
7	VisBio [7]		✓	✓	✓	
8	BoneJ [8]	✓	✓	✓	✓	✓
9	SkullyDoo [9]		✓	✓	✓	
10	ezDICOM [10]	✓	✓		✓	
11	Visible Patient [11]	✓		✓	✓	
12	OsiriX [12]	✓	✓		✓	
13	Amilab [13]		✓	✓	✓	
14	Dynamic Reslice [14]	✓	✓	✓		
15	JIV [15]	✓	✓	✓		
16	Anatomist [16]	✓	✓	✓	✓	✓
17	Materialize Mimics [17]	✓	✓		✓	
18	MRIstudio [18]	✓	✓		✓	
19	BioMap [19]		✓	✓	✓	
20	ImageVIS3D [20]	✓	✓	✓	✓	✓
Image Enhancement						
21	TORTOISE [21]	✓	✓	✓	✓	✓
22	AMIDE [22]	✓	✓	✓	✓	✓
23	NormalizeFOV [23]	✓	✓	✓	✓	✓
24	FastFilter3D [24]	✓	✓	✓	✓	✓
25	CLAHE [25]		✓	✓	✓	
26	Analyze [26]	✓		✓	✓	
27	PID [27]	✓	✓	✓	✓	✓
28	Amira [28]	✓		✓	✓	
3D Image Reconstruction						
29	ITK-SNAP [29]	✓	✓	✓	✓	✓
30	Invesalius [30]		✓	✓	✓	
31	CODE [31]	✓		✓	✓	
Image Processing						
Image Segmentation						
32	iCafe [32]	✓		✓	✓	
33	Segmentator [33]	✓	✓	✓	✓	✓
34	MeshNET [34]		✓	✓	✓	
35	LOCUS [35]	✓		✓	✓	
36	BrainSeg3D [36]	✓	✓	✓	✓	✓
37	ITK [37]	✓	✓	✓	✓	✓
38	BEaST [38]	✓	✓	✓	✓	✓
39	RMNMS [39]		✓	✓	✓	
40	CMP-BIA [40]	✓	✓	✓	✓	✓
41	E-Snake [41]	✓	✓	✓	✓	✓
42	GC [42]	✓	✓		✓	
43	AxioVision [43]	✓	✓		✓	
44	pyClusterROI [44]	✓	✓	✓	✓	✓
45	HeteroscedasticfMRI [45]	✓	✓	✓	✓	✓
Image Registration						
46	AAL [46]		✓	✓	✓	
47	elastix [47]	✓		✓	✓	
48	SICLE [48]		✓	✓	✓	
49	ANIMAL [49]		✓	✓	✓	
50	MRTool [50]	✓	✓		✓	
51	ART [51]		✓	✓	✓	
52	CerebroMatic [52]	✓		✓	✓	
53	ESM [53]	✓	✓	✓		
54	Mango [54]	✓	✓	✓	✓	✓
55	bUnwarpJ [55]	✓	✓	✓	✓	✓
56	ROMEO [56]	✓		✓	✓	
57	MIRTK [57]		✓	✓	✓	
58	ANTs [58]		✓	✓	✓	
59	Int. 3D Sur. Plot [59]		✓	✓	✓	
60	BrainVISA [60]	✓	✓	✓	✓	✓
61	Simpleware ScanIP [61]		✓	✓	✓	
62	3DimViewer [62]	✓	✓		✓	
Structural Analysis						
Brain Connectomics						
63	PrAGMATIC [63]	✓	✓	✓		
64	NeuroGPS-Tree [64]		✓	✓	✓	
65	FSL [65]		✓	✓	✓	
66	webKnossos [66]	✓		✓	✓	
67	BrainPrint [67]	✓		✓	✓	
68	The Virtual Brain [68]	✓	✓	✓	✓	✓
69	Neurosynth [69]	✓	✓	✓		
70	CBS Tools [70]	✓	✓	✓	✓	✓
71	NEURON [71], [72]	✓	✓	✓	✓	✓
72	Topographica [73]		✓	✓		
73	neuroConstruct [74]	✓	✓	✓	✓	✓
74	JRD-Fluid [75]		✓	✓	✓	
75	meaRtools [76]		✓	✓	✓	
76	PyTorch [77]		✓	✓	✓	
77	SliceMap [78]	✓	✓	✓	✓	✓
78	BRIAN [79]	✓	✓	✓	✓	✓
79	NeuroAct [80]	✓		✓	✓	
80	GC-LDA [81]	✓	✓	✓		
81	PRO [82]		✓	✓	✓	
82	DenyEtAl2017 [83]		✓	✓	✓	
83	LESYMAP [84]		✓	✓	✓	
84	FFBO [85]	✓	✓	✓		
85	GeNN [86]	✓		✓	✓	
86	ENIGMA-Viewer [87]	✓	✓	✓		
87	Diffeo. Demons [88]		✓	✓	✓	
88	CARLsim [89]	✓		✓	✓	
89	BOINIC [90]		✓	✓	✓	
90	TensorFlow [91]		✓	✓	✓	
91	DMN parcellation [92]		✓	✓	✓	
92	RakowskiEtAl2017 [93]		✓	✓	✓	
93	MS-HBM [94]	✓		✓	✓	
94	iPlan CMF [95]	✓		✓	✓	
95	GenerateNull [96]		✓	✓	✓	
96	Porcupine[97]	✓	✓		✓	
97	SDS model [98]		✓	✓	✓	
98	HegaEtAl2017 [99]	✓	✓	✓	✓	✓
99	BNRR [100]		✓	✓	✓	
100	BIDS Apps [101]	✓		✓	✓	
101	CVU [102]		✓	✓	✓	
102	SparseTracer [103]	✓	✓		✓	
103	iqr [101]		✓	✓	✓	
104	pyNN [104]		✓	✓	✓	
105	Brainlab [105]		✓	✓	✓	
106	Neurofield [106]		✓	✓	✓	
107	FiberNET [107]	✓		✓	✓	
108	T.D. decoding [108]	✓	✓	✓	✓	✓
109	CUBIC [109]		✓	✓	✓	
110	Nengo [110]	✓	✓	✓	✓	✓
111	Open Neuro. Lab [111]	✓	✓	✓		
112	NeuroGFX [112]	✓	✓	✓		
113	B.R. Connectome [113]	✓	✓	✓		
114	Conn. Explorer [114]		✓	✓	✓	
115	BrainMap [115]		✓	✓	✓	
116	Neurovault [116]	✓	✓	✓		
117	NetworkX [117]		✓	✓	✓	
118	JuBrain Atlas Viewer [5]	✓	✓	✓		
119	NeMo [118]	✓	✓		✓	
120	bgsmtr [119]		✓	✓	✓	
121	Pre. Conn. Project [120]	✓	✓	✓	✓	
122	Axon-Tracker-3D [121]		✓	✓	✓	
123	BCT [122]		✓	✓	✓	
124	Conn. Map Toolkit [123]		✓	✓	✓	
125	PyNWB [124]		✓	✓	✓	
126	BrainWeb [125]	✓	✓	✓		
127	Viking [126]		✓	✓	✓	
128	medInria [127]	✓	✓	✓	✓	✓
129	Cortex [128]		✓	✓	✓	
130	SCoRS [129]		✓	✓	✓	
131	Display [130]		✓	✓	✓	
132	XTK [131]	✓	✓	✓		
3D Image Analysis						
133	Brainstorm [132]	✓	✓	✓	✓	✓
134	ImageJ [133]	✓	✓	✓	✓	✓
135	nipype [134]	✓	✓	✓	✓	✓
Morphometric Analysis						
136	NAPR [135]		✓	✓	✓	
137	FracLac [136]	✓	✓	✓	✓	✓
138	SATURN [137]	✓	✓	✓		
139	Gwyddion [138]	✓	✓	✓	✓	✓
Quality Control						
140	MindControl [139]	✓	✓	✓		

Image Modelization						
141	ICMA [140]		✓	✓	✓	
142	Template-O-Matic [141]		✓	✓	✓	
Image Classification						
143	LA-iMageS [142]	✓	✓	✓	✓	✓
Image Mapping						
144	MRI Processor [143]	✓	✓	✓	✓	✓
Image Data Management and Annotation						
Image Format Management						
145	NiBabel[144]	✓	✓	✓	✓	✓
146	MRIcron[145]	✓	✓	✓	✓	✓
147	MRIconvert files[146]		✓	✓	✓	
DICOM File Management						
148	Jivex DICOM viewer[147]	✓	✓		✓	
149	DICOMsort[148]	✓	✓		✓	
150	DCMTK[149]		✓	✓	✓	
151	DICOMscope[150]	✓	✓		✓	
152	Orthanc[151]	✓	✓	✓		
153	WEASIS[152]	✓	✓	✓	✓	✓
154	DICOMBrowser[153]	✓	✓	✓		
155	Imebra[154]	✓	✓	✓		
156	HeudiconV[155]		✓	✓	✓	
157	dcmstack[156]		✓	✓	✓	
158	vtk-dicom[157]	✓		✓	✓	
159	DICOMpyler[158]	✓	✓		✓	
160	Aeskulap[159]		✓	✓	✓	
161	MIPAV[160]	✓	✓	✓	✓	✓

TABLE II: Database Tools not included in aXonica package

Sr. no	Software Tool Name
1	VPV[161]
2	NAT[162]
3	BBR[163]
4	NMT[164]
5	SPANOL[165]
6	Preprocessed connectomes Project[120]
7	MRIQC[166]
8	SimVascular[167]
9	NiftySim[168]
10	OntoVIP[169]

MATLAB Plugins are also not included in aXonica. (MATLAB is a paid software and requires license). Table III enlist all these software

TABLE III: MATLAB Plugins not included in aXonica

Sr. no	Software Tool Name
1	BrainSuite[170]
2	PRoNTo[171]
3	BRAPH[172]
4	MCPA[173]
5	Two regions constraints[174]
6	SINEAD[175]
7	GRETNA[176]
8	MENGA[177]
9	dive[178]
10	ECOG-Cluster flow[179]
11	ReserviorNet_OFC_TaskStabe[180]
12	Whole Brain[181]
13	R.T.T. of-Selective-Auditory-Attention[182]
14	dfcbenchmarker[183]
15	CSR Model[184]
16	Toolbox Romano-et-al[185]
17	LFP analysis[186]
18	MIBCA[187]
19	EEGNET[187]
20	FastFC[188]
21	SFSRR[189]
22	BART[190]
23	MANTiS[191]
24	MiRT[192]
25	NeuroManager[193]
26	AICHa[194]
27	eConnectome[195]
28	GraphVar[196]
29	PANDA[197]
30	GAT[198]
31	BrainNet Viewer[199]
32	DynamicBC[200]
33	calcFD[201]
34	breast-body-fusion[202]
35	MANIA[203]
36	PyNIFTI[204]

List of software tools and plugins included in aXonica package are shown in the following table. Software which are recommended are also mentioned in the table by using a bold text. Download size and version of each software is mentioned for user convenience.

TABLE IV: The table enumerates software packaged in aXonica in accordance with their categories.

Sr. No.	Software Name	Size (MB)	Software Version
Pre-processing			
Image Visualization			
1	Anatomist [16]	N-A	4.5.0
2	Dipy [1]	30	0.15.0
3	BoneJ [8]	0.7	1.0.0
4	**ImageVIS3D** [20]	30.9	3.1.0
Image Enhancement			
5	**AMIDE** [22]	40	1.0.4
6	PID [27]	5.1	1.12.0
7	TORTOISE [**?**]	751.5	3.1.0
8	NormalizeFOV [23]	732	1.2.0
9	FastFilter3D [24]	0.3	1.0.0
3D Image Reconstruction			

10	**ITK-SNAP** [29]	45.2	3.6.0
Processing			
Image Segmentation			
11	HeteroscedasticfMRI [45]	0.19	1.0.0
12	pyClusterROI [44]	0.4	1.0.0
13	**BrainSeg3D** [36]	18.5	1.0.0
14	CMP-BIA [40]	0.1	0.3.0
15	ITK [37]	88	3.4.7
16	E-Snake [41]	0.1	1.0.0
17	mincBEAST [38]	1.96	1.15.0
18	Segmentator [33]	1.7	0.19.1
Image Registration			
19	**Mango** [54]	67	1.7.0
20	bunwarpJ [55]	0.2	2.6.5
Image Surfacing			
21	**BrainVISA** [60]	1100	4.5.0
Structural Analysis			
Brain Connectomics			
22	The Virtual Brain [68]	670	1.5.4
23	CBS Tools [70]	147	3.1.0
24	HagaEtAl2017 [99]	0.1	1.0.0
25	NEURON [71], [72]	8	7.5.0
26	SliceMap [78]	44	1.0.0
27	Nengo [110]	38	2.8.0
28	neuroConstruct [74]	0.4	1.6.0
29	**MedInria** [127]	58	2.2.3
30	BRIAN [79]	68	2.0.2
31	Timedomain decoding [108]	0.5	1.0.0
Morphometric Analysis			
32	**FracLac** [136]	13.8	1.0.0
33	Gwyddion [138]	50	2.44.1
Image Classification			
34	**LA-iMageS** [142]	298	1.1.5
3D Image Analysis			
35	Brainstorm [132]	76.6	3.0.0
36	**ImageJ** [133]	137.7	2.0.0
37	nipype [134]	48	1.1.7
Image Mapping			
38	**MRI-Processor** [143]	0.5	1.0.0
Data Management and Annotation			
Format Management			
39	NiBabel [144]	48	2.3.1
40	**MRIcron** [145]	24.5	1.0.0
DICOM File Management			
41	MIPAV [160]	134	8.0.2
42	**Weasis** [152]	19	3.0.4

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