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| **Publication** | **Data** | **Tissue/ Syn type** | **Classification type** | **Feature/ Method** | **Res. Factor** | **Best single syn Ps/Rs** | **Comment** |
|  |  | **Mammalian cortex** |  |  |  |  |  |
| Mishchenko, Hu, Spacek, Mendenhall, Harris, Chklovskii, 2010 | 2 x 2 x 45 nm3 (ssTEM) | Rat CA1 | Boundary voxels | Intensity features orthogonal to boundary | 19.7 | 80%  85% | Fig. 3f |
| Kreshuk, Straehle, Sommer, Koethe, Cantoni, Knott, Hamprecht, 2011 | 5 x 5 x 9 nm3 (FIBSEM) | Rat S1 | voxel | EVs Hess, EVs Structure Tensor, Gaussian smoothing, Gauss Gradient magnitude, Laplacian of Gaussian, difference of Gaussians | 15.7 | 89%  92% | Improved by Becker et al., 2013 (see below). Reported in Fig. 3f |
| **Becker, Ali, Knott, Fua, 2012** | 6.8 x 6.8 x 6.8 nm3  5 x 5 x 5 nm3  5 x 5 x 5 nm3  (FIBSEM) | Rat S1  Rat Hippocampus  Rat Cerebellum | voxel | voxel features as in Kreshuk 2011 and context cues | 11.2  28.2  28.2 | 100%  100% | Used for comparison: Fig. 3f, Fig 3 – figure suppl. 3 |
| Kreshuk, Koethe, Pax, Bock, Hamprecht, 2014 | 4.5 x 4.5 x 45 nm3 (ssTEM) | Mouse V1 | Voxel & object classification | Voxel based features as in 2011  Object based features (summary statistics over synapse segmentation, local binary pattern, ratio of principal components) | 3.8 | 92.9%  88.2% | Not better in our data than Becker et al., 2013. Reported in Fig. 3f |
| Perez, Seyedhosseini, Deerinck, Bushong, Panda, Tasdizen, Ellisman, 2014 | 3.9 x 3.9 x 30 nm3 (SBEM) | Mouse SCN | voxel | Image filters | 7.8 | - | Inferior performance than Dorkenwald, 2017 |
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| Roncal, Pekala, Kaynig-Fittkau, Kleissas, Vogelstein, Pfister, Burns, Vogelstein, Chevillet, Hager, 2015 | 3 x 3 x 30 nm3 (ATUM) | Mouse S1 | voxel | RF:  Intensity  Local Binary Pattern  Image Grad. Magn.  Vesicles  Structure Tensor  CNN | 3.3 | 74%  88%  92%  74% | Used for comparison on ATUM data (Kasthuri et al., 2015),  Fig. 3f and Fig. 3-figure suppl. 4 |
| Neila, Baumela, Gonzalez-Soriano, Rodriguez, DeFelipe, Merchan-Perez, 2016 | 14.7 x 14.7 x 20 nm3 | Rat S | voxel | Gaussian classifier for voxel prediction and conditional random field for segmentation regularization | 0.8 | - | Performance as Kreshuk 2011 |
| **Dorkenwald, Schubert, Killinger, Urban, Mikula, Svara, Kornfeld, 2017** | 9 x 9 x 20 nm3  9 x 9 x 21 nm3  10 x 10 x 30 nm3 | Zebra finch  Zebrafish  Mouse striatum | Voxel | CNN | 2.2  2.1  1.2 | 90%  91%  91%  81%  95%  78% | Used for comparison  Reported in Fig. 3f and Fig. 3-figure suppl. 3 |
|  |  | **Other neuropil** |  |  |  |  |  |
| Jagadeesh, Anderson, Jones, Marc, Fisher, Manjunath, 2013 | 2.18 x 2.18 x 70 nm3  (ATEM) | Rabbit Retina,  Ribbon synapses | Region based | Laplacian of Gaussian (resolution pyramid)  Second order Gaussian derivative (for several angles)  Stability region and shape | 10.6 | - |  |
| Kreshuk, Funke, Cardona, Hamprecht, 2015 | 4.7 x 4.7 x 50 nm3 (ssTEM) | Drosophila larva | Voxel and  segment based | Partner detection, graphical model | 3.2 | 78%  90% |  |
| Huang, Scheffer, Plaza, 2016 | 10 x 10 x 10 nm3 (FIBSEM) | Drosophila optic lobe (medulla) | Voxel and interface classification | T-bar prediction as in Huang et al. 2014, postsynaptic partner prediction using segment interfaces | 3.5 | - |  |