

Supplementary Materials: Data Augmentation with Multi-armed Bandit on Image Deformations Improves Fluorescence Glioma Boundary Recognition

Anqi Xiao^{1,2}, Keyi Han^{1,2}, Xiaojing Shi^{1,2}, Jie Tian^{1,2,3,4,5}✉, and Zhenhua
Hu^{1,2,5}✉

¹ CAS Key Laboratory of Molecular Imaging, Beijing Key Laboratory of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences, China

² School of Artificial Intelligence, University of Chinese Academy of Sciences, China

³ Beijing Advanced Innovation Center for Big Data-based Precision Medicine, School of Engineering Medicine, Beihang University, China

⁴ Engineering Research Center of Molecular and Neuro Imaging of Ministry of Education, School of Life Science and Technology, Xidian University, China

⁵ National Key Laboratory of Kidney Diseases, China

tian@ieee.org, zhenhua.hu@ia.ac.cn

Table S1. The important hyperparameters for training different recognition models.

Model	image resolution	learning rate	weight decay	epochs	batchsize
ResNet-18	128	1e-3	1e-4	50	128
EfficientNet-B0	224	1e-3	0	200	128
DeiT-Tiny	224	1e-3	5e-2	200	128
DLS-DARTS	64	2.5e-3	1e-4	110	128

Table S2. The candidate 12 operations and corresponding valid magnitude ranges of EEA. *: Implemented using PyTorch, which is identical to [4,8] when using Pillow⁷.

Operator Name	Valid Range	Operator Name	Valid Range
ShearX	[-0.3, 0.3]	Sharpness	[0.1, 1.9]
ShearY	[-0.3, 0.3]	Solarize	[0, 256]
TranslateX	[-0.45, 0.45]	Posterize	[0, 4]*
TranslateY	[-0.45, 0.45]	Equalize	-
Rotate	[-30°, 30°]	AutoContrast	-
Brightness	[0.1, 1.9]	Identity	-

⁷ <https://github.com/python-pillow/Pillow>