Reference	Title	Dataset Description	Categories	Applied Models	Result	Pros	Cons
[1]	Automatic Fish Species Classification Using Deep Convolutional Neural Networks	**Training Dataset:** QUT Fish Dataset (3960 images across 3 environments: controlled, out-of-water, in-situ). **Testing Dataset:** LifeClef2015 Fish dataset (20,000 images across 15 species).	06	1.Alexnet 2. VGG-Net	**AlexNet:** 90.48%	□ Lower computational complexity than VGG-Net □ Efficient with fewer layers and training images □ Outperformed original AlexNet on test accuracy	□ Underperformed compared to VGGNet on validation □ Limited to only 6 species
[2]	Fish Species Recognition Based on CNN Using	□ **Total Data:** 1000 images □ **50 species**, 20 samples each	50	1.Alexnet 2. CIFAR-10 CNN	**Top-5 accuracy:** 91.4%	□ Obtained higher recognition accuracy than the original RGB	□ Only 20 images per class (limited training data) □ Performance still relatively low for

	Anno-tated Image					color image. □ Top-5 accu-racy ap-proach suitable for practical applica-tions	top-1 accu-racy com-pared to larger da-tasets/mod-els

References:

[1] M. A. Iqbal, Z. Wang, Z. A. Ali, and S. Riaz, “Automatic fish species classification using deep convolutional neural networks,” *Wireless Personal Communications*, vol. 107, no. 4, pp. 1425–1443, Dec. 2019, doi: 10.1007/s11277-019-06634-1.

[2] T. Miyazono and T. Saitoh, “Fish species recognition based on CNN using annotated image,” in *IT Convergence and Security 2017*, K. J. Kim, et al., Eds. Singapore: Springer, 2018, vol. 449, *Lecture Notes in Electrical Engineering*, pp. 155–163, doi: 10.1007/978-981-10-6451-7_19.