Adapting the YoneoLocr package for automated data processing at the Electron Bio-Imaging Centre

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We extend the application of the YoneoLocr package [1] for data acquisition at the Diamond Light Source Electron Bio-Imaging Centre (eBIC). This is an effort to expand our automated processing software (a Python package called AutoED) with automated recognition and classification of nano crystals, coupled with automated operation of the eBIC electron microscope. The YoneoLocr package (based on YOLO) already addresses the main problems with locating sample crystals and performing filtering based on diffraction images. In our case, the availability of processed results allows for additional feedback to improve the data acquisition part. The final goal is to decrease data collection time and increase the data quality by selecting only good potential candidate crystals.

[1] Yonekura, K., Maki-Yonekura, S., Naitow, H., Hamaguchi, T. & Takaba, K. (2021). *Commun. Biol.* **4**, 1-8.