CUHK-HK

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Platform: Linux

Prerequisites: Python 3, Julia

CUHK-HK: SUMMARY

The method follows the tracking by detection paradigm. It exploits U-Net for cell segmentation, followed by a min-cost flow routine for linking the segmented cell centroids into tracks.

CUHK-HK: PREPROCESSING

No preprocessing was applied.

CUHK-HK: SEGMENTATION

A convolutional neural network with the U-Net architecture [1] was trained using the silver truth until the binary cross-entropy loss function converged.

CUHK-HK: TRACKING

Given a relatively regular and almost rounded shape of cell nuclei in **Fluo-N2DH-GOWT1**, a distance-based, min-cost flow routine [2] was applied on the cell nucleus centroids to establish their temporal correspondences.

CUHK-HK: POST-PROCESSING

No post-processing step was taken.

REFERENCES

1. Ronneberger O, Fischer P, Brox T. U-net: Convolutional networks for biomedical image segmentation. In *Proceedings of Medical Image Computing and Computer-Assisted Intervention*, 234-241 (2015).
2. Padfield D, Rittscher J, Roysam B. Coupled minimum-cost flow cell tracking for high-throughput quantitative analysis. *Medical Image Analysis* **15**, 650-668 (2011).