PROPOSITIONS

Accompanying the dissertation

Advanced Storage and Retrieval Policies in Automated Warehouses

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I

Using order profile information in storage policies is key to reduce product retrieval time.

(This Thesis)

II

A compact puzzle-based storage system at maximum storage capacity operates optimally when multiple requested loads are joined and retrieved simultaneously.

(Chapter 2)

III

The optimal joining location of dual-load retrieval in a puzzle-based storage system is determined by the minimum x and y coordinates of the two loads.

(Chapter 2)

IV

Warehouse managers should include historical product turnover frequency information and product correlation to design efficient storage assignment policies.

(Chapter 3 and 4)

V

Correlated storage leads to shorter product retrieval times than product turnover-based storage (in robotic mobile fulfilment systems), when the product correlation Pareto curve is highly skewed and the demand pattern is relatively stable.

(Chapter 4)

VI

Robots add jobs, more intellectually challenging and exciting than the ones they replace.

VII

Research on high-density compact storage is like solving a puzzle for a good cause.

VIII

Random storage assignment may perform as efficient as data intensive storage assignments, under changing assortment and demand conditions.

(Inspired by discussions with Supervisor)

IX

Emerging technologies in automation and robotics coupled with advanced analytical models create ample opportunity for achieving high warehouse efficiency and throughput.

X

Robots do not work more efficiently than humans, unless they are designed to do so.

XI

It’s your road, and yours alone, others may walk it with you, but no one can walk it for you.

(Based on Rumi)