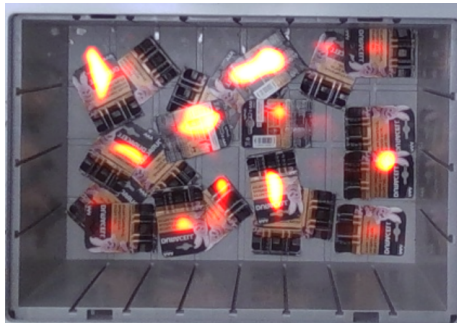


Contextual Bandit Exploration for Data-Efficient Training of Robotic Grasp Point Selection Models

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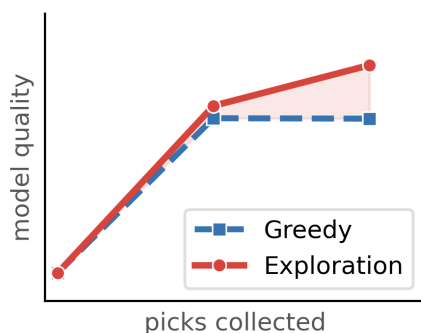
Where should a robot grasp? Our model reads a bird's-eye photo of a cluttered bin and predicts, for each pixel, how likely a pick would succeed. Improving it requires real robot experience, and robot time is scarce and expensive. We solve this with exploration inspired by multi-armed bandit techniques: by not always taking the safest pick, the robot gathers more informative data and needs fewer picks to improve. The approach is validated offline and in a real robot deployment.



A real bin of Duracell packs and the model's predicted heatmap



The robotic station used



Exploration data trains better models



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