

An Optimal Past-Domain Aware Task Assignment For Finding Good Workers

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In crowdsourcing, requesters need to find good workers, who have enough knowledge in a new domain and are called qualified workers, to achieve the goal of getting high-quality answers in the new domain. Although several approaches, such as selecting workers based on the quality of answers in past domains and utilizing qualification tasks, have been widely used, they are not enough for the goal. This study addresses the problem of finding more qualified workers by assigning qualification tasks with a limited budget. Our key idea to the problem is finding an optimal past domain, where more qualified workers who have enough knowledge also have enough knowledge in the new domain, from several past domains. We propose the multi-armed bandit task assignment method. This method finds the optimal past domain automatically during the assignment process and then assigns qualification tasks to workers who have enough knowledge in the optimal past domain intensively. We conduct extensive experiments by using real-world workers' and synthetic workers' answers, several domains, and two baseline methods. The results show the necessity and effectiveness of our proposed method.

(Supervisor Atsuyuki Morishima)