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Self-Aware Learning Agents in Improving User Efficiency

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Abstract

Self-aware learning agents should be able to exploit contextual information to perform proactively and anticipate user needs. The agents become virtual assistants, handling tasks such as scheduling resources and responding to requests according to the user preferences it has learned. We will address the user's state in both the desktop and mobile environments. We will design and build an Attention Manager as a set of learning modules whose goal is to learn user state and when it's appropriate to interrupt the user. There are published studies which indicate that 45% of interrupted tasks are not resumed. The Attention Manager classifies and learns user activity patterns and predicts the best opportunities to interrupt, playing an important role by helping the user to stay task-focused. It minimizes efficiency loss due to cognitive context swapping while maintaining user responsiveness. Building on this basic activity identification technology, the Attention Manager will then be able to work with an automated schedule planning system to launch tasks, report on accomplishments, and orchestrate user task

context swaps when automatically initiated activities have assembled new information requiring user input to proceed.